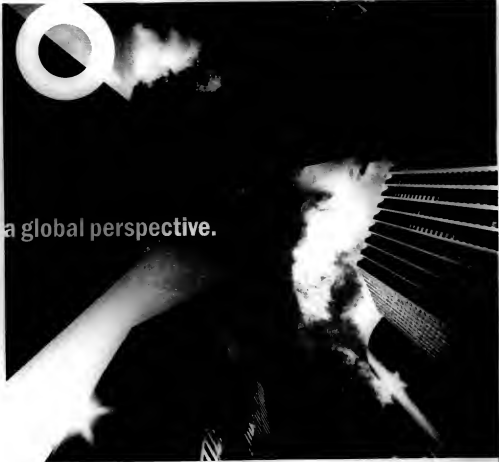


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CompUSA used Microsoft SQL Server 2000 with Analysis Services and Data Transformation Services to extract point-of-sale data from 228 stores, 150 applications, and numerous databases, and then integrate the information into one data warehouse.

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Self-Service Client



Microsoft

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WORTH MAKING THE MOVE?

Faster speeds and lower support costs — not the zero purchase price — make Linux worth deploying, says Ed Wojciechowski (left) at packaging company Menasha Corp. **PAGE 42**



SINGING FOR THEMSELVES

Treating prima donnas like other employees may be a mistake. Read about how to tone down their behavior to enhance staff harmony and productivity. **PAGE 46**

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SECURITY PLAN

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 On some pages in this issue, you'll see a QuickLink code pointing to additional, related content on our Web site. Just enter that code into our QuickLink box, which you'll see at the top of each page on our site.

Use QuickLinks to see related stories, discussion forums, research links, archives and more.

AT DEADLINE

HP, BEA to Detail App Server Deal

Hewlett-Packard Co. today plans to announce that it will bundle a trial version of BEA Systems Inc.'s WebLogic application server software with all of its servers, starting with those running HP-UX. HP said in July that it was dropping its own Java-based transaction software in favor of a joint sales deal with BEA (ENRlink 31485). In return, Sun Java-based BEA will promote HP's OpenView management tools.

Feds Extend Net Contract With ICANN

The U.S. Department of Commerce has decided to extend for another year the agreement under which the Internet Corporation for Assigned Names and Numbers (ICANN) manages the Domain Name System. But the agency said that it wants Marina Del Rey, Calif.-based ICANN to speed up a review of the Internet root server system's security, among other things.

Elison Steps Down From Apple's Board

Apple Computer Inc. announced that Oracle Corp. CEO Larry Ellison is resigning from its board of directors. Ellison said in a statement that his schedule doesn't allow him "to attend enough of the several board meetings to warrant a role as a director." He has been a member of Apple's board since 1987.

Short Takes

Blue Box, Fla.-based UNISYS CORP. this week plans to expand its ClearPath server line by adding a model with new workload and performance management tools. . . . CISCO SYSTEMS INC. released patches to plug a pair of security holes in the Linux, Solaris and Macintosh versions of its WWW 5000 Client software, which offers virtual private networking capabilities.

Eclipsed Sun Tries to Brighten Horizon With New Initiatives

Moves seen as challenges to HP, Microsoft, IBM

BY JAIKUMAR VILAYAN
SAN FRANCISCO

SUN MICROSYSTEMS Inc. is hoping to regain some of its lost momentum with major new initiatives aimed at giving corporations better control of their data center assets and an alternative to Microsoft Corp. technologies on the desktop.

At the SunNetwork 2002 user conference here last week, Sun executives announced an enterprise desktop initiative code-named Mad Hatter, under which the company will deliver preconfigured desktop bundles running Linux with Sun's StarOffice and other open-source office productivity software.

Sun fleshed out details of another long-term initiative, called NI, under which it will develop management software that will help users administer and use their data

center computing resources far more cost-effectively.

The company also outlined a new delivery strategy for its high-end systems under which it will increasingly let companies order systems that are configured to their specific requirements. Sun will deliver such preconfigured bundles using integration and consulting services from its iForce channel partners and systems integrators.

The aim of efforts such as those is to reduce complexity and the cost of technology acquisition and ownership, CEO Scott McNelly said in his keynote address.

"The No. 1 issue on customer minds is cost. Our biggest competitor is the chief financial officer," McNelly said.

Sun's strategy makes competitive sense, said Jean Bozman, an analyst at IDC in Framingham, Mass. "Sun is smaller than IBM and Hewlett-Packard, yet they have to compete with them in every way," Bozman said.

What Sun is attempting to do is give users a technology portfolio that ranges from the desktop to high-end servers

A New Dawn



and offers an alternative to Microsoft, analysts said.

With Sun's desktop stack, for instance, users get office productivity, browser, mail and Web server software that inter-operates completely with Microsoft's offerings at a per-user cost that's less than \$50 per month, compared with more than \$50 for Microsoft software, according to Jonathan Schwartz, Sun's vice president of software.

Despite the obvious appeal, Sun is still "fighting an uphill battle," said Phil Black, manager of infrastructure services at Petro-Canada in Calgary, Alberta. Although Sun's desktop

stack might make sense in relatively small environments, large users will find it a major challenge to introduce and integrate it into existing Microsoft environments, he said.

Microsoft No Pushover

"StarOffice is a great alternative to Microsoft Office. But it still remains to be seen if Sun's innovation can overcome Microsoft's market presence and inertia," said analyst Michael Dorch at Robert Frances Group Inc. in San Francisco.

Meanwhile, Solaris will continue to be Sun's standard-bearer on the high end. Schwartz said. And going forward, the company will increasingly bundle more of its now-separate Sun Open Net Environment software stack into Solaris, he added.

SunNetwork — Sun's first user show in 10 years — comes at a tough time for the company. Though it's still the Unix market leader and had revenue of more than \$3.5 billion in the last quarter, Sun has failed to make a profit in three of its past four quarters. Its stock — which traded at above \$60 about 18 months ago — is now languishing at less than \$3.

Sun's exposure to the economic slowdown has been especially severe because of its dependency on the telecommunications and financial services markets, said Mark Tolliver, Sun's chief strategy officer. The meltdown of those two sectors — both of which played a major role in Sun's extraordinary growth of the past few years — has hurt the company, Tolliver said. As a result, expect to see Sun make more of an effort in areas such as health care, biotechnology and energy, he said. ■

STILL MAZY

Sun's NI plan is expected to move slowly.

ENRlink 32051
www.computerworld.com

Gambling on the Linux Desktop

Sun Microsystems faces an uphill challenge in trying to push its Linux-based desktop office productivity offering against Microsoft's long-established client software, analysts said last week.

But it might find an audience in certain vertical market segments and among corporate users who are looking for an alternative to Microsoft in the wake of that company's unpopular new software pricing scheme, they added.

Sun last week introduced a bundled desktop offering featuring world-class hardware, Linux, Sun's StarOffice productivity suite and open-source software such as the Mozilla Web browser, Evolution

e-mail client and the GNU Object Model Environment Interface. The client desktop hardware, which Sun will roll out in one standard configuration only, will also include support for Java card technology for authenticating user access to applications.

Sun will roll the technology in 100-unit bundles that will also include a server for identity management and portal and messaging capabilities. Sun didn't discuss pricing for its configuration, which it hopes to start shipping sometime in the first half of next year.

But users can expect to see substantial savings in acquisition costs and total costs of ownership, said Jonathan Schwartz, Sun's vice

president in charge of software.

The increased reliability and acceptance of Linux and of open-source software makes such an offering attractive to some companies, said Mark Tolliver, Sun's chief strategy officer.

Sun's desktop offerings held a lot of promise in areas where cost and security are an issue, such as call centers and educational institutions, he said.

The movement generated by Microsoft's Software Assurance program might also make Sun's pitch appealing for some users, said Michael Dorch, an analyst at Robert Frances Group, particularly considering that Sun already has a presence in many companies. —Jonathan Vilayan

Demand for U.S. IT Workers Remains Soft, Survey Shows

ITAA/Dice report says hiring rebound still on hold; some blame offshore outsourcing

BY THOMAS HOFFMAN

Although the U.S. IT workforce has grown by 2% since the beginning of the year, the short-term hiring outlook remains bleak, according to an updated report being released today by the Information Technology Association of America (ITAA) and Dice Inc.

Telephone interviews conducted in July and August with hiring managers at 84 IT vendor companies and 216 non-IT companies revealed that "the original optimistic hiring forecast at the beginning of the year has been tempered by the economy," said Scott Melland, president and CEO of Dice, a New York-based provider of online recruiting services for technology professionals.

Many unemployed IT workers are shifting the blame elsewhere. Computerworld regularly receives letters from disgruntled IT professionals who

claim that they have in-demand skills such as C++, Java and Oracle training and yet haven't been able to find work for months. Many of them point the finger at H-1B visa holders and offshore programming outfits, where a growing number of companies are shifting their development and maintenance work to reduce costs.

Influence From Overseas

The U.S. General Accounting Office is about to embark on a study of the impact of the H-1B visa program on U.S. jobs [QuickLink 32833]. The results of that study are due next year.

But some IT professionals say offshore outsourcing is having a more significant and longer-term impact on U.S. IT workers.

Outsourcing not only leads to job cuts; it also allows corporations to avoid paying unemployment taxes when de-

mand for labor slackens, said Norman A. Lane, president of Artech Professional Services Inc., a Phoenix-based consulting and contracting firm. Lane contends that to prevent tax losses to the federal government, U.S. companies that engage in offshore outsourcing should pay a levy "on every outsourced job to compensate U.S. taxpayers."

ITAA President Harris Miller has been a lightning rod for H-1B critics, since the Arlington, Va.-based trade association is largely made up of technology vendors such as IBM, Cisco Systems Inc. and others who have made extensive use of foreign IT specialists. While he said he believes the economy has been the biggest culprit, even he acknowledges that offshore programming "is having an impact" on the U.S. IT job market.

"The real challenge is offshore programming — not the few thousand [IT workers] that come to the U.S., but the workers in Ireland and South Africa and India that are paid much

less to do the work," said Miller. "I think there is more work going offshore in part due to the pressure to keep costs down, and there's huge downward pressure on software vendors to keep their labor

rates down," he added.

"So much work is going offshore, we're putting ourselves at a substantial [intellectual capital and security] risk," said Linda McNelis, an independent contractor and head of the hiring initiative at Boston-SFIN, an Acton, Mass.-based group of 1,200 Boston-area software professionals. ■

Labor Daze

Key findings from the ITAA/Dice updated IT workforce study:

■ The U.S. IT workforce has grown by a net 86,487 positions since January, from 3,865,916 jobs to 3,952,403.

■ Employees added 792,468 IT workers and disbanded 867,026 IT employees during the period.

■ The number of IT worker layoffs has dropped substantially in the past 12 months. Between January and December 2001, companies released 2.8 million IT workers, more than 28 million last month. Between July 2001 and June 2002, the monthly total dropped to 195,000.

■ Companies have hired for fewer

IT workers in the past 12 months.

Between January and December 2001, companies hired 2,866,462 IT workers, compared with 1,554,931 workers between July 2001 and June 2002. Hiring dropped 25% during this hiring period.

■ Top IT demand fields haven't changed much since last year. C++, Oracle, SQL, and Java remain at the top of the list, and demand for these skills has held steady or increased slightly.

■ If current hiring trends hold, the total U.S. IT workforce will reach just over 12 million workers by the end of the year, 10% below expectations earlier in 2002.

Source: InformationWeek Global Hiring Manager Survey (Q1 2002), July and August 2002. SOURCE: THE ITAA/DICE ANALYSIS, EMPLOYMENT STUDY "TECHNOLOGY SKILLS."

IBM Sets Price Increases on Enterprise Version of DB2

Says new features justify database's cost

BY MARC L. BONOMO

IBM is adding a variety of features to the next version of its flagship DB2 relational database, which is due for release in November. But it's also adding to the price of the software's enterprise edition.

IBM officials last week disclosed that Version 8 of DB2 Universal Database will ship on Nov. 21 for Unix, Linux and Windows systems. As part of the rollout, they said, IBM plans to consolidate its DB2 Enterprise Edition and DB2 Extended Enterprise Edition packages into one offering

priced at \$25,000 per CPU — \$5,000 more than what the company now charges for the base version of the software.

In addition, database clustering support will now be sold as an add-on feature costing \$7,500 per CPU. Clustering is currently included in the extended version of the enterprise edition, which costs \$35,000.

But IBM isn't just raising prices. The per-CPU cost for the workgroup version of DB2 will be cut from \$14,000 to \$7,500, the company said. And IBM officials pointed to the

new functionality that's coming in Version 8, in an attempt to justify the price increases at the enterprise level.

"There's a little bump in price for the enterprise version, but we added 432 new features to this release," said Jeff Jones, director of strategy at IBM's data management solutions unit. "This is a major, major upgrade for us."

DB2 Version 8, which was announced two months ago without pricing details, includes new self-managing interface, a built-in configuration adviser and other enhancements [QuickLink 31664].

Despite the price increases, an IBM spokeswoman said DB2 will still cost users less than the \$40,000 per CPU that rival Oracle Corp. charges for

the enterprise version of its Oracle9i database.

But Inequine Woods, vice president of global pricing and licensing strategy at Oracle, said via e-mail that DB2 still falls short of Oracle9i on functionality. "As such, no one should expect the price to be the same," she said.

Oracle last week reported that database revenue fell 9% year to year in its first quarter ended Aug. 31. But IBM claimed that it

has had 21 consecutive quarters of database revenue growth as of this year's second quarter.

David Beulke, president-elect of the Chicago-based International DB2 Users Group, said he doesn't mind the price increase, given the new features IBM is promoting. "The total cost of ownership for DB2 continues to be cheaper than

competing platforms," said Beulke, a consultant and developer at Pragmatic Solutions Inc. in Alexandria, Va.

"I expect they will go to pay for development, and the features are worth it," said Martin Hubel, a database consultant in Toronto who uses DB2 Version 7.2 to run a Web site and plans to upgrade to Version 8 as soon as the software is available.

But Mike Schiff, an analyst at Current Analysis Inc. in Sterling, Va., said some users may choke on any price increase in the current IT spending environment. "I can see Larry Ellison having a field day," Schiff said, referring to Oracle's CEO. Nevertheless, he added that current offers "is a relatively small consideration" in database purchases. ■

James Nicolai of the IDG News Service contributed to this report.

ORACLE Q1 SLIDE

The software vendor reports another year-to-year drop-off in revenue and profits.

■ QuickLink 32892

www.computerworld.com

BRIEFS

J.D. Edwards, IBM
Ink Integration Deal

Denver-based J.D. Edwards & Co. said it plans to integrate IBM's DB2 database, WebSphere Application Server and other middleware products into its business applications. The integration work is due to be completed by year's end. J.D. Edwards said the price of its applications will increase, but it added that users will get more functionality and should be able to reduce their software integration costs.

Cisco Ends Reseller
Agreement With Dell

Cisco Systems Inc. confirmed that it plans to drop Dell Computer Corp. as a reseller of its networking products as of Friday. Cisco declined to comment on its reasons, but Dell is now selling its own line of network switches that compete with products such as Cisco's. Dell said it will be able to continue supplying Cisco gear until Oct. 31 to users that are deemed critical.

Flaws Discovered in
Microsoft's Java Code

Microsoft Corp. warned of three software flaws in its virtual machine code for running Java applications on Windows-based PCs. The most serious flaw could be used by attackers to gain complete control of vulnerable systems, said Microsoft, which gave the problem its maximum severity rating. The company urged users to install a patch designed to plug the holes.

Short Takes

WORLDCOM INC. said it will cut about 2,000 of the 8,300 workers at its European unit and link new network infrastructure investments in the region. . . . SUN MICROSYSTEMS INC. said it plans to buy Pirus Networks Inc., an Acton, Mass.-based developer of storage network software.

MARK HALL • ON THE MARK

Vendors Target IT
Job Elimination ...

... with a slew of new systems management products that, in one way or another, automate many formerly employee-dependent administrative tasks. As Rick Lane, COO at Heroix Corp. in Newton, Mass., observes, "In tough times like these, you can't hire IT talent; in good times, people are too expensive." So the company thinks now is the right time to ship **eQ 1.5**, the latest upgrade to its systems management software. Those who go to keep their jobs, however, will be treated to 18 new agents to monitor Microsoft Corp.'s Active Directory in this

week's software release. Lane is betting AD does better in the market on Net servers than it has so far on Windows 2000, what with its dubious security and replication reputation. But just in case, eQ 1.5 will also enhance its management of NetWare and WebLogic, and even OpenVMS, which astoundingly enough is still a growth market for Heroix, according to Lane. • Help desk careers will become a little less secure as well, with this week's release of AppSight Web Support 4.0, a \$25,000 add-on module to Raleigh, N.C.-based Identity Systems Ltd.'s management suite. The new product, which, fortunately for users, the company has given the same numbering sequence as the suite, handles remote users' problems with any

application on their desktop systems. Users with troubles simply log onto a Web page and click a few buttons, and a diagnostic "black box" follows the user through the problem and automatically

reports back to the appropriate level of support. Notice: No tech support necessary. • Unemployed IT pros can take some satisfaction that managed service providers (MSP) are in retreat. According to Mary Nugent, a VP and general manager in BMC Software Inc.'s subscription server business unit, "The MSP Association's ranks have dwindled." What's more, she says, "I think there's less than 10 that will survive." Why? Two things, Nugent says. MSPs catered to the dot-com silliness, which sealed many of their ill fortunes. Second, the



survivors' fallback was serving small and medium-size businesses (SMB). Wrong move, Nugent says. SMBs have little experience with outsourcers, and that's not changing. Large organizations, though, "get it" and are embracing selective MSPs. BMC's own MSP offering, Guardian Angel, is also being licensed to users as part of the vendor's famous Patrol line of management products, giving companies an opportunity to eliminate jobs through the subscription or licensing approach. • One area of automation that is possible but so far is being only partly accomplished is server change management, says Kia Behnia, chief technology officer at Marimba Inc. in Mountain View, Calif. "Customers don't feel comfortable with a fully automated mechanism," he says. Instead, they upgrade a staging or test server first to ensure that operating system patches, for example, won't cause applications to stumble. Users of Marimba's Server Change Management offering, now in its 2.1 release, will get Citrix support in the next iteration. Behnia also says the next release will include integration with systems management tools from Mercury Interactive Corp. and BMC. Another lively plus will be the ability to roll back changes of any server application to its prior state, just in case a problem crops up. Of course, since everyone is using staging servers, that may not be a big deal. When will users be ready to fully automate change management? Not for two to five years, Behnia predicts. ■

• In last week's On the Mark column, a senior product manager at Rational Software Corp. was misidentified. The correct name is Jeffrey Hammond.

Air2Web Readies Upgrades
To Wireless Applications

Software links users
to corporate data

BY MATT HAMBLEN

Air2Web Inc. today is due to announce an upgrade of its mobile Internet middleware that's designed to let end users access corporate data via wireless connections and a variety of handheld devices.

Client applications are supported for handhelds that run

operating systems from Palm Inc. and Research In Motion Ltd., as well as Sun Microsystems Inc.'s Java 2 Micro Edition. Air2Web said. Support for devices based on Microsoft Corp.'s Pocket PC operating system is also coming, but Atlanta-based Air2Web wouldn't say when it will be available.

The middleware release lets handheld users pull data from corporate servers and then do their work regardless of whether they're connected to a

network. For example, Air2Web said, a utility worker could download a trouble ticket and then disconnect from the network to fill out the form. Roberta Wiggins, an analyst at The Yankee Group in Boston, said Air2Web's biggest competitors in mobile data synchronization are Synchronix Inc. in Alpharetta, Ga., and PumaTech Inc. in San Jose. But Air2Web's new software appears to provide a more efficient way to download data than most rival products, she added.

Air2Web also plans to unveil an upgrade of its i2Mail wireless e-mail and alert service, with new content encryption, validation and signature cap-

abilities that are aimed at enhancing the security of messages sent to handheld devices.

One of the pilots users of the new service is Vigilar Inc., an Atlanta-based IT security consulting firm that's sending e-mail messages to 20 consultants on Short Message Service phones from Schaumburg, Ill.-based Motorola Inc. "The consultants are always in the field, so they're not always able to check e-mail, and this is a great way to keep in touch," said Byron Pezan, a network engineer at Vigilar.

The messages are prioritized for distribution from an e-mail server and can each include up to 160 characters, Pezan said. ■

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Air2Web also plans to unveil an upgrade of its 2Mail wireless e-mail and alert service, with new content encryption, validation and signature capa-

bilities that are aimed at enhancing the security of messages sent to handheld devices.

One of the pilot users of the new service is Vigilar Inc., an Atlanta-based IT security consulting firm that's sending e-mail messages to 20 consultants on Short Message Service phones from Schaumburg, Ill.-based Motorola Inc. "The consultants are always in the field, so they're not always able to check e-mail, and this is a great way to keep in touch," said Byron Pezan, a network engineer at Vigilar.

The messages are prioritized for distribution from an e-mail server and can each include up to 160 characters, Pezan said. ▶

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EDS Renews P&G Outsourcing Talks

Rival drops out;
deal could be close

BY TODD R. WEISS
AND JUAN CARLOS PEREZ

TWO MONTHS after ending talks with Procter & Gamble Co. (P&G) on a big IT and business operations outsourcing contract, Electronic Data Systems Corp. is pursuing the deal again. And now its chief rival has given up the chase.

Dallas-based Affiliated Computer Services Inc. (ACIS) took itself out of the running for the contract last week, saying that "the financial, operational and cultural risks were too high." ACIS appeared to be the only contender left when EDS withdrew in July (Quicklink 3181).

But in an unusual flip-flop, Plano, Texas-based EDS renewed its discussions with P&G earlier this month, ac-

cording to a spokesman for the Cincinnati-based maker of consumer products.

The P&G spokesman said the new round of talks with EDS began before ACIS announced its decision to pass on the deal. "There were just a number of differences in operations and other things where we could not reach agreement," the spokesman said of P&G's negotiations with ACIS.

EDS spokesman John Clendenen confirmed that the outsourcing vendor and P&G are again trying to work out an agreement. Both Clendenen and the P&G spokesman said the companies could be just days away from signing a deal.

P&G is looking to outsource its back-office operations and the IT systems that support them in a deal that could affect up to 3,700 workers. The deal would involve a sale of the back-office operations to the outsourcing vendor, and EDS initially balked at the purchase price P&G was seeking.

Lesley Pool, chief marketing officer at ACIS, said it's "unbelievable" that the company will change its mind about giving

up on the contract. ACIS planned to turn P&G's Global Business Services operation into a business unit that would also seek back-office outsourcing deals with other clients, Pool said. But ACIS decided that the unit's growth potential was lower than it had originally estimated, she added.

According to Pool, ACIS examined P&G's financial practices, analyzed its IT systems and even looked at how P&G's IT workers would view an out-

Outsourcing Developments

JUNE: P&G confirms that it's looking to outsource its back-office operations and systems.

AUG: EDS says it's dropping out of the running.

SEPTEMBER: EDS resumes talks with P&G; ACIS withdraws from negotiations.

sourcing arrangement with the services company. "The synergies were not there," she said.

Analysts have estimated the potential value of the P&G contract at anywhere from \$4 billion to \$8 billion over 10 years. But the disclosure that EDS is back in the picture at

P&G came at a delicate time for the outsourcing company, which warned last week that its third-quarter financial results will be well below expectations (see story, below left).

Stephen David, CIO and chief business-to-business officer at P&G, said this month that the outsourcing deal is expected to include management of the company's enterprise resource planning system, which is based on SAP AG's R/3 applications. SAP is now rolling out its supply chain planning software and will outsource that as well, he said. ■

Prevez written for the *EDG News Service*.

Marc L. Songini contributed to this report.

Bank Awards HP \$1.5B IT Deal, Exits Services Joint Venture

BY TODD R. WEISS

Hewlett-Packard Co. bulked up its outsourcing operations last week by signing a \$1.5 billion IT services contract with the Canadian Imperial Bank of Commerce (CIBC) and agreeing to buy the bank out of a 4-year-old joint venture.

For Toronto-based CIBC, the two deals end a foray into the IT services business that the bank started on its own and then continued through the Intra-HP joint venture. Intra-HP manages much of CIBC's IT infrastructure and provides technology outsourcing and support services to eight other identified customers, including General Motors Corp.

Under the agreements, HP said it will gain about 1,280 IT workers and take over management of systems at CIBC ranging from desktop PCs to data center servers.

Michael Woeller, the bank's CIO, said the deals will let CIBC focus on its financial services business and should "free significant capital" that now is being spent on technology.

CIBC awarded the outsourcing contract to HP without is-

suing a formal request for proposals, Woeller said. "Over the last four years, the two companies have gotten to know each other really well," he noted. Woeller also said that the seven-year deal will be HP's willingness to buy CIBC's 51% stake in Intra-HP "to some degree go hand in hand."

Ann Livermore, executive vice president of HP's services unit, said the contract is HP's largest outsourcing deal. CIBC, which has 8 million customers, will also become HP's largest outsourcing client.

The systems that HP will manage for CIBC include a mix

Intra-HP Highlights

of Unix and Windows NT servers, plus IBM AS/400s and the fault-tolerant Nontop H-malays machines HP bought as part of its acquisition of Compaq Computer Corp. in May, Livermore said.

"To be a large services player, we have to deal with whatever is in our customers' environments," she said. HP will also manage IT procurement for CIBC and provide application support services.

Andrew Estabrooth, an analyst at The Yankee Group in Boston, said HP has made growing its IT services revenue a top priority. The company's services business has already expanded in recent years, Estabrooth said, but he added that it's still a far cry from the size of rivals such as IBM Global Services and Electronic Data Systems Corp. The CIBC outsourcing deal is "the type of stake in the ground that HP needs," Estabrooth said.

HP and CIBC didn't disclose the terms of the Intra-HP buy-out, which is scheduled to be completed by Nov. 1. But Livermore said HP will still make money on the outsourcing contract after the buy-out, because the amount it's paying for CIBC's stake in the joint venture. ■

Juan Carlos Perez of the *EDG News Service* contributed to this report.

MORE ON OUTSOURCING

For full coverage of IT outsourcing, go to our IT Management Knowledge Center.

Quicklink 2259
www.computerworld.com

EDS Expects Big Q3 Earnings Shortfall

EDS said its third-quarter earnings won't come close to matching earlier projections, because of a shortfall in new business and lower direct-revenue from existing contracts with corporate users.

The company said net income for the quarter is now expected to be \$30 million to \$24 million, instead of the \$354 million target it had set previously. Third-quarter revenue will likely come in at \$5.3 billion to \$5.5 billion, down from its original prediction of up to \$5.9 billion.

This will be the second straight quarter that EDS has failed to meet its expectations, and the outsource-

ing vendor said it expects the difficulties to continue for the remainder of the year and into 2003. EDS reduced its fourth-quarter revenue and profit projections as well.

"These are not the results you've come to expect from EDS; it's not the type of news we're used to delivering," said CEO Dick Brown said during a conference call. "We were more optimistic than we should have been relative to our ability to fight our way through a tough environment. We expected our clients' discretionary spending to tighten, not virtually stop."

—Juan Carlos Perez, *EDG News Service*



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IT Helps Insurance Firms Deal With Money-Laundering Rule

Conference attendees say technology will be key in push to comply with antiterrorism laws

BY LUCAS MEARIAM
CHICAGO

THE INSURANCE industry is being pushed into the uncharted waters of dealing with antiterrorism regulations, leaving many companies looking to their IT managers for help in providing a quick fix to complicated compliance issues.

Until now, new antiterrorism measures such as the U.S. Patriot Act have mostly applied to banks and brokerages. But as attendees at last week's insurance-oriented LOMA Emerging Technology Conference here listened to speakers discuss possible new federal regulations, the U.S. Depart-

ment of the Treasury announced a proposed rule that would require insurers to create programs aimed at preventing money laundering.

That puts the onus squarely on IT, according to Scott Harrison, a partner at McLean, Va.-based KPMG Consulting Inc. "You have to have the ability to

track and analyze your transactions," Harrison told attendees. "Compliance requires a very heavy reliance on technology."

Several IT managers at the conference said the mere likelihood of new regulations had already placed a heavy burden on them to find technology that can screen databases for known criminals or terrorists and alert corporate compliance

officers to suspicious activities by customers.

"A lot will depend on how the legal department interprets the new regulations," said Joe Shea, an IT manager in the asset development division at Allmerica Financial Corp. in Worcester, Mass. "It's not only an IT challenge, but a workflow challenge."

The Patriot Act already requires financial services firms to verify customer identities, submit suspicious activity reports to the Treasury Department's Financial Crimes Enforcement Network (FinCEN) and check customers against crime databases established by law enforcement agencies. But FinCEN had deferred applying anti-money-laundering requirements to insurers in order to give federal regulatory officials more time to study the industry.

According to the rule now being proposed, at a minimum insurance companies would

have to develop internal procedures and controls to root out money-laundering activities and make a series of IT investments (see box).

FinCEN narrowed the proposed requirements to life insurance and annuity products because they "allow a customer to place large amounts of funds into the financial system and seamlessly transfer such funds to disguise their true origin," according to the proposed rule.

In addition, life insurance policies can be cashed in for redeemable amounts, which make them "particularly inviting money-laundering vehicles," FinCEN said.

For life insurers, though, the rule could mean big changes. "We're going to spend a lot of time and money on monitoring that we didn't do in the past," said Shawn Bryan, vice president of e-business development at National Life Insurance Co. in Montpelier, Vt.

What's in Store

Regulators will likely require insurers to take the following IT-related steps:

- Development of systems that can help provide money-laundering controls
- Use of more sophisticated database surveillance tools to identify suspicious activity
- Checking customer databases and transactions against the list of restricted countries established by the Federal Office of Foreign Assets Control
- Use of an IP-based virtual private network connection to send reports to the Treasury Department

Bryan said National Life installed new software this year to automate the process of checking customers. "I'm sure everybody's already got it or is working on it," he added. ■

WIRELESS FUTURE

Some insurers are trying wireless technology but haven't fully embraced it yet.

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U.S. Faces Nanotechnology R&D 'Dogfight'

Europe, Asia are matching U.S. funds

BY PATRICK THROCKMOL
WASHINGTON

Countries in Europe and Asia are keeping pace with U.S. spending on basic research in nanotechnology, according to experts in that area. Consequently, U.S. investment in the technology, which manipulates matter atom by atom and is expected to spur a computing revolution, is only about 20% of the world's total.

"It's a dogfight — the rest of the world simply is not going to allow us to outstep them," said Stanley Williams, a fellow and director of quantum science research at Hewlett-Packard Co., in an interview

last week. "We are going to have to be qualitatively better because we are not going to be quantitatively larger."

As foreign spending increases, nanotechnology companies in the U.S. are struggling to find funding.

For instance, Charles Janak, president and CEO of Nanomic Inc., made presentations to 41 venture capital firms and attended an exhausting 145 meetings over nine months before receiving \$9 million in funding earlier this month for his nanotechnology electronic component and sensor product company in Emeryville, Calif.

He's lucky. Many other firms probably won't get funding. "I fear for them," said Janak.

The government could stimulate nanotechnology development by spending more on re-

search to fuel product development, said researchers and private nanotechnology experts.

The race among nations to be leaders in this technology prompted Sen. Ron Wyden (O-Or.) to introduce a bill last

week to create national nanotechnology research centers and coordinate federal spending. Wyden is chairman of the Senate's Science, Technology and Space Subcommittee.

Separately, the Bush administration is seeking \$679 million for basic nanotechnology research for the fiscal year beginning Oct. 1 — a 17% in-

crease over this year.

Business investment in nanotechnology start-ups is also on the rise. Investment in these companies stood at \$300 million in 1999 and is projected to reach \$1 billion by next year, according to Mark Modzelewski, executive director of the New York-based Nano-Business Alliance, who testified last week at a Senate hearing on nanotechnology.

But despite these potential gains in funding, experts say more research and development funds are needed, along with reforms in how universities use research funds.

Williams said major companies have helped fund nanotechnology research at universities only to find researchers using their findings to form start-up firms.

"Large companies have been burned many, many times by giving money for research to universities," he said. ■

Nano Revolution

Nanotechnology is expected to ultimately make it possible to build computers in which molecules serve as diodes, wires and transistors — all built atomically. From these CPUs, tiny computing devices would emerge that use very little power and yet are millions of billions of times more powerful than today's Pentium chips.

DEVELOPMENTS

■ **Intel Research, NY** said it has created the highest-density electronically addressable memory to record a 64-bit memory with 100 million bits per byte. This new system is expected to be a 100-fold increase in storage capacity over today's Pentium chips.

■ **IBM, NY** said it had produced a new-world storage capacity using the use of a diamond-based density of 1 billion bits per square inch — 20 times higher than the current target storage capacity today.


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*See IBM study by Timothy J. Dall, "White Paper on the Benefits of Chipkill Correct ECC for PC Server Main Memory" dated November 25, 1997 available at the following: <http://www.ibm.com/mainframe/undx/papers/compchipkill.pdf>. IBM, the e-business logo, Chipkill, pSeries and e-business are the game. Play to win are trademarks or registered trademarks of International Business Machines Corporation in the United States and/or other countries. UNDX is a registered trademark of The Open Group. Other company product and service names may be trademarks or service marks of others. ©2002 IBM Corporation. All rights reserved.

BRIEFS

Cisco Rolls Out Three Midrange Switches

Cisco Systems Inc. introduced a line of three midrange switches that support up to 240 Ethernet ports and include built-in redundant power supplies. The Catalyst 4500 series switches use the same line cards and supervisor engines as the three-year-old Catalyst 4000 models. Cost said. Price start at \$34,475 for the new switches.

EMC Adds Storage Management Tools

EMC Corp. expanded its line of multi-user storage management software, adding an application that automates the process of identifying and reallocating resources on storage-area networks. Hephthorn, Mass.-based EMC also upgraded several management tools and launched a hosted application performance monitoring service.

DynCorp/IBM Team Wins IT Deal at EPA

A team of vendors led by Reston, Va.-based DynCorp was awarded a seven-year deal, potentially worth more than \$250 million, to manage IT systems for the U.S. Environmental Protection Agency. The team includes IBM, which said it will run the EPA's data center systems, e-mail services and Web sites under a subcontract valued at up to \$230 million.

Short Takes

Cambridge, Mass.-based INTERSYSTEMS CORP. today plans to announce an upgrade of its Cache multidimensional database with built-in transaction data analysis capabilities. . . . Santa Clara, Calif.-based NETWORK ASSOCIATES INC. and Cupertino, Calif.-based TRENDS MICRO INC. both said they were committed to supply software solutions to the U.S. Defense Information Systems Agency.

Savvy CIOs Go Beyond ROI Metrics in IT Budget Process

More IT execs are using sophisticated calculations to figure shareholder value

BY THOMAS HOFFMAN

WHILE MANY IT managers are satisfied with simply determining the cost reductions or payback generated by an IT investment, a small but growing number of IT leaders are setting their sights beyond traditional ROI metrics. Their goal: to demonstrate the shareholder value and complete financial impact of an IT project.

As many corporate IT executives struggle to sail down their fiscal 2003 spending levels this budget season, some savvy CIOs are making use of sophisticated financial modeling techniques. Those techniques, such as net present value and internal rate of return (IRR), generate more telling and accurate estimates of the full financial impact that IT investments might yield, these CIOs say.

Calculations such as IRR help IT managers pinpoint "what aspects of the IT system are delivering value," such as improved cash flows or increased sales, said Chris Gardner, co-founder of iValue, a Chicago-based consulting firm that helps its customers justify their IT investments.

IRR Propositions

That's one of the reasons why Gaylor Entertainment Center CIO Kent Fourman has become an advocate of IRR and discounted cash flow calculations. Last year, the Nashville-based hospitality and entertainment company, whose interests include the Grand Ole Opry, brought in a new management team that "sponsored" this

approach for all facets of the company, including the IT organization.

Since then, Fourman has applied IRR calculations to several IT/business projects, including a revenue-generating opportunity for his company that he's reluctant to elaborate on for competitive reasons.

A detailed IRR analysis of the plan "came in with a very positive IRR that greatly exceeded the cost of capital, even though it is a very expensive, multimillion-dollar project," he said. Those findings were enough to persuade senior management to approve a proof-of-concept trial later this year that could lead to project

funding for next year.

The IT organization at Valassis Communications Inc., a Livonia, Mich.-based marketing services firm, switched to an IRR model in June after an ROI assessment for an e-procurement system was unable to provide an accurate analysis of the project's financial impact on the company, said Amy Courter, vice president of IT. "ROI works well when you're [looking at] revenue generation or cost savings," she said. "But what about when it spans both? That's why we thought [IRR] could help us."

The IRR analysis helped Courter and her team determine that the e-procurement system could help Valassis save more than \$100,000 per year in volume discounts on its purchases. The calculations also revealed that the company could pass on some of the cost sav-

ings from the system to its customers and generate \$250,000 per year in incremental revenue, said Courter. All told, the IRR for the e-procurement system "is around 20%, and the payback is expected in just about two years," she said.

Limitations

Fourman and Courter both acknowledge that it's nearly impossible to apply IRR to infrastructure or equipment upgrade investments, such as installing a server farm. Accordingly, not all IT executives see a need to use sophisticated calculations to cost-justify IT investments within their organizations. "We take a very traditional yet pragmatic and practical approach toward understanding the value that IT projects deliver to our organization, some of which is quantifiable, most of which is very difficult to quantify," said Phil Go, CIO at Barton Malow Co., a Southfield, Mich.-based construction management firm.

Not every project needs to be quantified, say some IT executives.

"Visionary retail companies are thinking in ways that are necessarily justifiable on paper, but they know in their guts it's the way to move," said Cathy Hootka, vice president of IT at the National Retail Federation in Washington. That type of approach is also aided by the success of past technology investments in the retail sector that "have shown their merit, and a lot of purchases don't have to be cost-justified anymore," she added.

But for Valassis, "IRR always made such great sense," said Courter. "Instead of having a room full of business people figure out [the returns on an IT investment], we do it for them. While I always seek guidance to make sure it's prioritized correctly, we're in great shape when we go in the room."

Financial-ese

Here are definitions for three financial calculations that can be used to determine the full financial impact of an IT project:

Internal rate of return (IRR)
WHAT IT IS: IRR expresses the dollar return expected from a project as an interest rate. Once the rate is established, you can compare it with rates you would earn by investing in other projects. It's informally known as the "hurdle" rate, since it's usually the lowest rate of return that management will accept.
WHY YOU NEED TO KNOW IT: It's a common financial metric used by senior management that calculates the true value of money. Typically, a project must earn an IRR that's one or two percentage points higher than the cost of borrowing—that compensates the company for its risk exposure and time.

Net present value (NPV)
WHAT IT IS: NPV refers to the fu-

ture net cash flow that a project is expected to deliver, minus the investment. It denotes the value of a project in today's dollars.
WHY YOU NEED TO KNOW IT: NPV can help your IT department use internal investment dollars by showing the financial department that investing in an e-learning system, for example, will yield a high return in terms of reduced travel costs, highly focused training and more.

Discounted cash flow (DCF)
WHAT IT IS: DCF is a way to calculate the value of a high-potential project in a more lasting agreement, for example, it's calculated by adding the initial cash down payment, then subtracting that sum from what it would have cost to purchase the servers at the end of the project.
WHY YOU NEED TO KNOW IT: Negotiating upfront what the residual value of equipment will be at the end of a lease agreement on IT management to use that value—rather than the higher market value—to negotiate the bases for subsequent terms.



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SMARTER SECURITY™

Vendors Spar On Workplace Net Surfing

Firm's no-monitoring claim being disputed

BY PATRICK THIBODEAU
WASHINGTON

IT managers who want to control workplace Internet use have a new adversary, a San Diego company that claims to make it possible for employees to surf anonymously.

Anonymous Inc. last month released a new version of its product, Private Surfing 2.0, and coupled it with a bold marketing claim: "Surf at work without being monitored." Indeed, employees are being encouraged to pay \$20.95 annually to circumvent system in place by their IT departments. But the message to surf-happy employees ought to be "bigger beware."

No sooner had Anonymous begun its marketing campaign than Orange, Calif.-based Neo Technologies Inc. is taking on the slang expression "eighty-six" meaning "to eliminate" and announced a simple library update to thwart Anonymous. Another security and filtering company, St. Bernard Software Inc. in San Diego, said it didn't even have to make changes to thwart Anonymous's product.

Potential for Misuse

IT managers such as Harold Moscho, director of technology management for 6,000 users at MultiCare Health System in Tacoma, Wash., are nonetheless concerned by the development. "I hope that it is not something that is very widespread," said Moscho, who's using 860's filtering technology. He said he's concerned that Anonymous may appeal to people "who have a great deal of desire for vengeful or mischievous" behavior.

Users of Private Surfing surf the Internet through Anonymous

Inc.'s network. They log on through their Web browser and get IP addresses and domain names that can't be traced back to them.

The filtering services are thwarting employees by blocking access to Anonymous.com. And if the connection is encrypted, Nets will turn-out or cut off an encrypted link, said Mark Parker, a senior engineer at Neo.

Anonymous officials dispute claims that its system can be blocked by these filters; if blocked, the Anonymous.com domain can make available other IP addresses and domains.

Regardless, firm founder and president Lance Correll downplayed the workplace surfing claim. "We're not really pushing the surfing at work," he acknowledged that employees can use a range of tools, such as keylogger monitoring, to track employee Internet use. ■



Continued from page 1

Wireless LANs

keys that can be changed rapidly, rather than the static keys used in WEP. Not only are WEP keys static, but every user working with a particular wireless LAN access point receives the same key, allowing hackers using widely available key-cracking software to crack keys with relative ease.

Barkley said the SSN partners don't plan to wait until the IEEE issues its final version of the 802.11 standard but will instead incorporate TKIP into their products as soon as possible. And rather than wait for the next Windows XP service pack release, Microsoft will in-

corporate TKIP into XP before the end of the year, he added.

Dennis Eason, chairman of the Wireless Ethernet Compatibility Alliance (WECA), a wireless LAN industry trade group in Mountain View, Calif., said that final details on an industrywide SSN standard are "very close" and that the WECA plans to make a major announcement next month.

John Pescatore, an analyst at Gartner Inc., said plans by the industry to leapfrog the IEEE 802.11 standards body make sense because the IEEE process "moves very slowly" and the wireless LAN industry needs better security immediately.

Barkley said the first Windows XP service pack, released earlier this month (QuickLink 32875), includes support for

BMC Ups Performance Management Software

Four new or upgraded tools due for release

BY MATT HAMBLEN

BMC SOFTWARE INC. today plans to announce four new or upgraded performance management and predictive analysis tools for use in planning installations and upgrades of corporate IT systems.

The new products are part of an Enterprise Performance Assurance initiative at Houston-based BMC that combines a variety of performance management tools for distributed systems and mainframes under a single business unit.

BMC said it will immediately release Web-based software, called Patrol Perceive, that's designed for use by business managers and other workers outside of IT departments. The software can help users evaluate how a network or part of a system will perform while running under certain conditions or with specific applications, according to BMC.

For example, a corporate ex-

ecutive without specific technical skills could gauge how a network would handle a sudden influx of end users following an acquisition, a BMC official said. Patrol Perceive is being positioned as a low-cost alternative to BMC's more sophisticated assessment tools. Pricing starts at \$20 per Windows user.

Richard Fromberger, a capacity planning specialist at AFLAC Inc. in Columbus, Ga., said Patrol Perceive, or something similar that could be developed in-house, would be a valuable add-on tool for the insurer.

AFLAC's IT department already uses BMC's higher-level Patrol Performance Assurance tools for capacity planning and performance analysis. Fromberger said. But Patrol Perceive could be used throughout the company to evaluate the performance of applications and systems, he added.

BMC will also announce that it plans to roll out a new version of Patrol Performance Assurance in December that in-

cludes support for remote management of Windows systems, without the need to install agents on the machines. The upgrade will also include an open architecture that lets performance data be moved to other vendors' software.

The two other new products, Mainview Performance Assurance and Patrol for iSeries-Predict, are due for release next week. The Mainview upgrade extends BMC's predictive analysis capabilities for IBM's iSeries mainframes to include virtual machine partitions that run under Linux. BMC said Patrol for iSeries-Predict will be able to identify how changes to IBM's iSeries and AS/400 systems will affect their responsiveness.

James Governor, an analyst at Illuminata Inc. in Nashua, N.H., said BMC's announcements should help it meet the needs of a wider range of users. IBM's Tivoli Software management software unit began a similar effort last year, he said. BMC also competes in this market with Computer Associates International Inc. ■

Protected Extensible Authentication Protocol (PEAP), which fixes a known vulnerability in the new 802.11 standard that authenticates the identity of a user with a central server. Dan Bailey, director of wireless net-

working at NTRU Cryptosystems Inc. in Burlington, Mass., said PEAP can help rectify flaws in 802.11 that could possibly let a hacker "hijack a user authentication session" through what he called "a man-in-the-middle attack" on such a session.

Linda Horuchi, a spokeswoman for Cisco, said the company intends to add PEAP support to its Wireless Security suite this week but declined to provide further details.

Pescatore said that while PEAP and TKIP haven't gone through the IEEE approval process, they will become de facto standards because of the size and influence of the companies backing them. "They're better than the [current] alternatives, and [the manufacturers] have to ship something." ■

JUST THE FACTS

The Safe Secure Networks Project

Members include Agere Systems, Cisco Systems, Intel, Microsoft, Proxim and Sprint Technologies.

The group plans to leverage the IEEE standards process by adopting a protocol known as TKIP to help prevent the cracking of keys used to secure wireless LANs.

A major SSN announcement on TKIP is slated for next month. It could prompt plans to introduce TKIP in Windows XP by the end of the year.

Vendors Spar On Workplace Net Surfing

*Firm's no-monitoring
claim being disputed*

BY PATRICK THIBODEAU
WASHINGTON

IT managers who want to control workplace Internet use have a new adversary, a San Diego company that claims to make it possible for employees to surf anonymously.

Anonymous Internet, last month released a new version of its product, Private Surfing 2.0, and coupled it with a bold marketing claim: "Surf at work without being monitored."

Indeed, employees are being encouraged to pay \$29.95 annually to circumvent systems put in place by their IT departments. But the message to surf-happy employees ought to be "beware."

No sooner had Anonymous begun its marketing campaign than Orange, Calif.-based Be6 Technologies Inc. (a takeoff on the slang expression "eighty-six" meaning "to eliminate") announced a similar library update to thwart Anonymous. Another security and filtering company, St. Bernard Software Inc. in San Diego, said it didn't even have to make changes to thwart Anonymous's product.

Potential for Mislead

IT managers such as Harold Moscho, director of technology management for 6,000 users at MultiCare Health System in Tacoma, Wash., are nonetheless concerned by the development. "I hope that it is not something that is very widespread," said Moscho, who's using Be6's filtering technology. He said he's concerned that Anonymous may appeal to people "who have a great deal of desire for vengeful or mischievous" behavior.

Users of Private Surfing surf the Internet through Anonymous's

network. They log on through their Web browser and get IP addresses and domain names that can't be traced back to them.

The filtering services are thwarting employees by blocking access to Anonymous.com. And if the connection is encrypted, Be6 will time-out or cut off an encrypted link, said Mark Parker, a senior engineer at Be6. Anonymous officials dispute claims that its system can be blocked by these filters. If blocked, the Anonymous.com domain can make available other IP addresses and domains.

Regardless, firm founder and president Lance Corvill downplayed the workplace surfing claim. "We're not really pushing the surfing at work," he acknowledged. Employees can use a range of tools, such as keystroke monitoring, to track employee Internet use. ■

Continued from page 1

Wireless LANs

keys that can be changed rapidly, rather than the static keys used in WEP. Not only are WEP keys static, but every user working with a particular wireless LAN access point receives the same key, allowing hackers using widely available key-cracking software to crack keys with relative ease.

Barkley said the SSN partners don't plan to wait until the IEEE issues its final version of the 802.11 standard but will instead incorporate TKIP into their products as soon as possible. And rather than wait for the next Windows XP service pack release, Microsoft will in-

corporate TKIP into XP before the end of the year, he added.

Dennis Eaton, chairman of the Wireless Ethernet Compatibility Alliance (WECA), a wireless LAN industry trade group in Mountain View, Calif., said that final details on an industrywide SSN standard are "very close" and that the WECA plans to make a major announcement next month.

John Pescatore, an analyst at Gartner Inc., said plans by the industry to leapfrog the IEEE 802.11 standards body make sense because the IEEE process "moves very slowly" and the wireless LAN industry needs better security immediately.

Barkley said the first Windows XP service pack, released earlier this month (QuickLink 32675), includes support for

secure without specific technical skills could gauge how a network would handle a sudden influx of end users following an acquisition, a BMC official said. Patrol Perceive is being positioned as a low-cost alternative to BMC's more sophisticated assessment tools. Pricing starts at \$20 per Windows users.

Richard Fronheiser, a capacity planning specialist at AFLAC Inc. in Columbus, Ga., said Patrol Perceive, or something similar that could be developed in-house, would be a valuable add-on tool for the insurer.

AFLAC's IT department already uses BMC's higher-level Patrol Performance Assurance tools for capacity planning and performance analysis, Fronheiser said. But Patrol Perceive could be used throughout the company to evaluate the performance of applications and systems, he added.

BMC will also announce that it plans to roll out a new version of Patrol Performance Assurance in December that in-

cludes support for remote management of Windows systems, without the need to install agents on the machines. The upgrade will also include an open architecture that lets performance data be moved to other vendors' software.

The two other new products, Mainview Performance Assurance and Patrol for iSeries-Predict, are due for release next week. The Mainview upgrade extends BMC's predictive analysis capabilities for IBM's iSeries mainframes to include virtual machine partitions that run under Linux. BMC said Patrol for iSeries-Predict will be able to identify how changes to IBM's iSeries and AS/400 systems will affect their responsiveness.

James Governor, an analyst at Illuminata Inc. in Nashua, N.H., said BMC's announcements should help it meet the needs of a wider range of users. IBM's Tivoli Software management software unit began a similar effort last year, he said. BMC also competes in this market with Computer Associates International Inc. ■

Protected Extensible Authentication Protocol (PEAP), which fixes a known vulnerability in the new 802.1x standard that authenticates the identity of a user with a central server. Don Bailey, director of wireless net-

working at NTRU Cryptosystems Inc. in Burlington, Mass., said PEAP can help rectify flaws in 802.1x that could possibly let a hacker "bypass a user authentication session" through what he called "a man-in-the-middle attack" on such a session.

Linda Horiuchi, a spokeswoman for Cisco, said the company intends to add PEAP support to its Wireless Security suite this week but declined to provide further details.

Pescatore said that while PEAP and TKIP haven't gone through the IEEE approval process, they will become de facto standards because of the size and influence of the companies backing them. "They're better than the [current] alternatives, and [the manufacturer] have to ship something," ■

NEWS

BMC Ups Performance Management Software

Four new or upgraded tools due for release

BY MATT HAMBLEN

BMC SOFTWARE INC. today plans to announce four new or upgraded performance management and predictive analysis tools for use in planning installations and upgrades of corporate IT systems.

The new products are part of an Enterprise Performance Assurance initiative at Houston-based BMC that combines a variety of performance management tools for distributed systems and mainframes under a single business unit.

BMC said it will immediately release Web-based software, called Patrol Perceive, that's designed for use by business managers and other workers outside of IT departments. The software can help users evaluate how a network or part of a system will perform while running under certain conditions or with specific applications, according to BMC.

For example, a corporate ex-

JUST THE FACTS: The Safe Secure Networks Project

Members include Apple Systems, Cisco Systems, Intel, Microsoft, Proxim and Symbol Technologies.

The group plans to keep the IEEE standards process by adopting a protocol known as TKIP to help prevent the cracking of keys used to secure wireless LANs.

A major SSN announcement on TKIP is slated for next month. Microsoft plans to introduce TKIP in Windows XP by the end of the year.



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COMMUNICATION WITHOUT BOUNDARIES

IBM, Intel Set Plans to Work Together on Blade Servers

Devices will support e-mail, other applications

BY BOB BREWIN

Technology heavyweights IBM and Intel Corp. last week said they're teaming up to develop high-density blade servers that will use Intel processors and be able to run corporate applications such as e-mail, firewalls and e-commerce systems.

The two companies are also cooperating on the development of blade server chassis and related networking and systems management technology. Tim Dougherty, director of blade server strategy for IBM's server group, said the company plans within a month to introduce new systems developed through the partnership.

Blade servers are modular computers housed on a tightly packed board that's designed to squeeze more processing power into a standard rack with far less cabling than older rack-mounted systems require. Framingham, Mass.-based IDC predicts that worldwide blade server sales will total only about \$120 million this year but will grow to \$3.7 billion in 2006.

The move by IBM and Intel follows Hewlett-Packard Co.'s introduction last month of dual-processor blade devices

sited at applications such as Web hosting and streaming media [QuickLink 324991]. HP said it will add a four-CPU model early next year, and Dell Computer Corp. disclosed that it plans to field a line of modular blade servers next year.

IBM already offers low-end blade servers. Now it plans to use Intel's Xeon server chips to move into more complex middle-tier applications, said Dougherty, citing the Microsoft Exchange and Lotus Domino e-mail systems, as well as front-end processing for enterprise resource planning systems.

"They're putting more power on the blade," said Gordon Haft, an analyst at

Illuminata Inc. in Nashua, N.H.

Phil Brace, director of marketing at Intel's enterprise platforms group, said the two companies are initially working on devices based on the Xeon and Xeon MP processors. But systems will also be built around the 64-bit Itanium 2 chip that Intel released in July, he added.

Both IBM and Intel will be able to offer all the jointly developed products to their respective customer bases. IBM said it will market a full portfolio of blade server technologies to corporate users. And later this year, Intel plans to make Xeon-based blade servers available to hardware vendors who don't want to develop their own systems. ■

RLX Rollout Boosts Blade Server Power

RLX Technologies Inc. last week expanded its line of blade servers, releasing more powerful hardware as well as upgraded systems management and clustering software.

The Woodstock, Mass.-based RLX rolled out a high-end ServeBlade 12000 system that's based on Intel's 1.2-GHz Pentium III chip for mobile devices. The new machine offers twice the memory capacity and 50% more processing speed and disk storage space than the 8000 model RLX, which shipped in March.

Until now, RLX has pushed its fit as every blade server as possible into a single system chassis. The company can squeeze 24 of its earlier high-density servers into one cabinet, thanks to the use of processors made by Sun in Clare, Calif.-based Transmeta Corp.

The more powerful Pentium III chip limits how many the 12000 servers can be stacked together, but it also makes them even suitable for "performance-sensitive" applications, said John Schmitz, a marketing manager at RLX.

Users can put 12 of the 12000 blades in one of RLX's chassis. Each blade server supports up to 2GB of memory and two 500GB disk drives, RLX said. Prices start at \$1,529.

—Arlene Manos, *PCW News Service*

UnitedLinux Group Names GM, Readies Beta Code for Merged OS

BY TODD R. WEISS

In UnitedLinux, the fledgling vendor consortium that's trying to develop a uniform version of the open-source operating system, last week announced the hiring of its first general manager and said it plans to release a beta-test version of the software today.

The beta source code will be posted on the UnitedLinux Web site and made available for free download. Paula Hunter, who is now heading the joint development partnership, said during a teleconference that one of her initial priorities will be to help UnitedLinux prepare for a scheduled launch of its operating system by year's end.

Hunter said she will also focus during the next 100 days on trying to con-

vince additional companies to join the UnitedLinux effort and on developing training, certification and support programs for the new operating system. She worked most recently as vice president of marketing at Xevo Corp., a Marlboro, Mass.-based vendor of service management software.

UnitedLinux was formed last spring by four rival vendors of the open-source software — SuSE Linux AG, Connective SA, Turbolinux Inc. and Caldera International Inc., which has since changed its name to The SCO Group. The companies agreed to combine their separate Linux offerings into a single operating system aimed at corporate users [QuickLink 30239].

More than a dozen hardware and ap-

plication software vendors are also taking part in the consortium, according to UnitedLinux officials. But Red Hat Inc., the dominant Linux vendor in the U.S., is notably absent from UnitedLinux.

George Weiss, an analyst at Gartner Inc. in Stamford, Conn., said another potential problem for UnitedLinux is the fact that Hunter doesn't have a background in Linux or open-source technology. "The users are starting to get hammered into the coffin" of the consortium, he said.

Hunter acknowledged that she has not worked directly with Linux, but she said her ability to help reach a consensus is more important. "My responsibilities are to pull together the collective expertise of four companies with deep Linux experience," Hunter said. ■

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Worm Sets Up Peer-to-Peer Attack Network

BY PAUL ROBERTS

A new computer worm infected thousands of Linux-based Web servers last week and used them to create a peer-to-peer network with the potential to carry out distributed denial-of-service (DDoS) attacks. But security analysts were divided over how big a threat the worm heralds for systems on the Internet.

The worm, known officially as Apache_mod_ssl and more informally as Slapper, exploits a previously disclosed buffer overrun vulnerability in Version 2.0 of the Open Secure Sockets Layer data transmission protocol. I-Secure Corp., a security software vendor, said nearly 34,000 systems worldwide running the open-source Apache Web server software had been infected by Slapper by last Monday.

Coordinated Attack

Once they have been infiltrated by the worm, Web servers effectively become bots in a large peer-to-peer network of infected machines, which then scan for other vulnerable systems in a coordinated effort, analysts said.

That sets Slapper apart from its worm predecessors, said Russ Cooper, a security consultant at TruSecure Corp. in Herndon, Va. "Slapper is new in the sense that [the infected machines] keep in touch with each other using their own network," he said.

The current version of Slapper doesn't appear to be programmed to carry out actual DDoS attacks, Cooper added. Still, he cautioned that future variants of the worm might include the ability to send and receive instructions.

F-Secure said many of the infected systems were quickly cleansed by IT managers. By last Thursday, scans conducted by F-Secure detected fewer than 200 active IP addresses in Slapper's peer-to-peer network.

But Tony Magallanes, a systems engineer at F-Secure's North American operations, said Slapper's source code is

well documented. "Anybody getting a hold of the source can quickly learn how to exploit the virus itself," he said.

While setting up a peer-to-peer network of infected devices is new behavior for a worm, it's not an entirely new

phenomenon, said Marty Lindner, an incident-handling team leader at the CERT Coordination Center at Carnegie Mellon University in Pittsburgh.

"This is not the first time that we've seen something that

produces a command-and-control network," he said. "That's not new. This is just another method of delivery." ■

Roberts writes for the IDG News Service.

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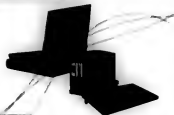
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MARYFRAN JOHNSON

Innovation Still Matters

THE HEAVY FOG of buzzword-compliant marketing and breathless exaggeration surrounding most technology products would give any sober IT manager pause before purchasing a mouse pad, let

alone something important. That's especially true today, when proving the value of IT spending with hard numbers and bottom-line results is not just politically smart but also downright essential.

In our front-page story last week ("Windows XP Slow to Gain Foothold," QuickLink 32873), the reluctance of corporate IT to jump on the next Microsoft bandwagon spoke volumes for the practical, payback-oriented mind-set of technology buyers.

"This is an upgrade that offers nothing to a business customer," one CIO said dismissively about XP. Others cited the high costs, the low need and the general weariness from having just sloggled through the Windows 2000 upgrade.

Yet we know that even with IT budgets flattened and spending squeaky tight, the need for business innovation is still there, perhaps more pressing than ever before. So, what products are worth a second look through the beady eyes of IT buyers? The best source for that answer, of course, would be you and your peers, and that's whom we turned to for Computerworld's Innovative Technology Awards 2002.

Beginning on page 26 in this issue, we profile the 10 winners in this customer-choice contest, which drew about 200 nominations from the ranks of IT customers themselves. The winners ranged from small companies you've likely never heard of to major vendors such as IBM and Software AG. Their offerings included everything from network security and enterprise software to data management, biometrics and wireless

optical technology.

In some cases, the ROI was memorably speedy. When First Citizens Bank installed an intrusion-detection system from Intercept Security Technologies, it was just three days before the infamous Code Red worm struck nationwide. "We kept humming along, without skipping a beat, so... that was a definite

return on investment," said Jay Ward, a senior network security analyst at the bank.

In other cases, the customer satisfaction results were compelling enough to waive the expenditure past budget gatekeepers. Terabeam's wireless optics product, for example, enabled the Elliott Grand Hyatt Hotel in Seattle to provide more flexible high-bandwidth connections for the demanding techies who often stay there.

In every case, we noticed that the

driving force behind the tech investments in these companies' products was the potential for real payback, really fast. Nobody was looking for the buzz of a hot product, but everybody was looking for ways to improve business results. Innovation still matters.

Another way we hope to help you sort out the most promising products on technology's cutting edge is with a column that made its debut in our news section last week (QuickLink 32813). Longtime technology journalist Mark Hall will be taking a skeptical, fly-eyed look at upcoming products and services in his "On the Mark" column each week (see page 8). "The best IT operations use a balance of mundane products and some pretty cool technology," Mark notes. "Staying aware of what's on the cutting edge — and what's worth a second look — is easier said than done with literally thousands of companies vying for your attention."

We hope you'll find Mark's new column to be a highly useful, hyper-technology filter. His mandate is to look ahead and detect the most intelligent signs of life in the vendor community. He'd love to hear from you with ideas and suggestions at mark_hall@computerworld.com. ■

PIMM FOX

Desktop Management Boosts IT

ONE OF THE BIGGEST problems for Stephen Kutzer when he joined Washington-based CarrAmerica Realty as vice president of IT operations was that he didn't know the true state of, well, the company's IT operations.

CarrAmerica owns 25 million square feet of office space in 11 major U.S. markets and manages 60 additional buildings in the same areas. It counts leasing and building agents, porters, lobby receptionists and security personnel as possible computer users. And while a third of all its workers (in all functions, accounting, IT and human resources) are in northern Virginia, the rest are spread around the country.

"I didn't know who was using what," says Kutzer. "I didn't even know exactly how many users we had, because some of our 900 people never touch a computer."

Kutzer decided to deploy a desktop management system and to outsource help desk functions, using an Internet connection and thin-client software from Everdream Corp.

Applying the ASP concept with a heavy emphasis on service-level agreements (help desk calls must be answered in under 60 seconds), Everdream gives Kutzer an inventory of equipment and information to calculate upgrades and identify problems.

Among the issues Everdream turned up was that a previous deployment of Windows 98 had been compromised because of poor imaging onto the desktops. And in addition to problem discovery, Kutzer got better information about his infrastructure. For example, with a couple of clicks, he can export into a spreadsheet user names, locations, computer make and model

More columns and links to archives of previous columns are on the Web site:
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Pimm Fox is a freelance writer in San Francisco. Contact him at pfox@earthlink.net.



numbers, CPU information, how much data is on a hard drive, and its software configurations.

Rolling out managed desktop services is less cumbersome because it's possible to check specific requirements. "I know which machines we need to upgrade to XP, because I can see who needs a 500-MHz processor and 128MB of RAM," he says.

A surprise for Kutzer was the number of applications in use at CarrAmerica. Everdream identified more than 1,600 unique applications: "I was worried if we were in compliance," Kutzer says. Now the company is.

Kutzer secured senior-level buy-in to managed desktop services by turning over help desk functions to Everdream, cutting four IT staffers in the process. Currently, CarrAmerica relies on Everdream for 77% of trouble tickets (the goal is 90%), and a 24-hour help desk lets people beyond the Beltway get help during their work hours.

In addition to the benefits of knowing what's going on in IT, the company can use Everdream to help implement IT standards after an acquisition.

"Senior managers got that right away," says Kutzer. "And my IT people like it because they get to do more interesting things than fix printers." ■

DAN GILLMOR

Most Trade Shows Lose Focus on IT

HERE'S A CONFESSION: For all their nuttiness and hassle, I like trade shows. But I'm running low on good reasons to attend them these days. And from the looks of things, IT managers aren't finding many compelling reasons either. Lots of companies, including some big ones, have run out of reasons to rent booth space, too. Sony, for example, has announced its withdrawal from Comdex, the formerly essential show held each November in Las Vegas. What's happened to make this so? I'm not sure which is the chicken and which is the egg here, but exhibitors are less inclined to participate in shows, and the rest of us aren't attending. Certainly, the technology recession has made it more difficult for companies to spend on trade exhibits. But

maybe that's also because there's so little true innovation occurring today. In a market where a few giants are increasingly dominating everyone else, that means there's less to show.

And with travel budgets getting whacked, where IT execs might have sent three or four people in better times to a big show, now they'll send one or two at most.

The basic unpleasantness of some shows is another factor. When you're waiting in endless taxi lines, paying extortionate hotel room rates and generally being hassled in every way, the fun of the event tends to pale a bit.

Don't forget the glut of shows that sprang up during the tech boom. You could have spent your entire year doing nothing but attending trade events,



AND WILLIAM T. HARRIS, JR. is the author of *The New Computer Game*.

most of which featured the same stuff you saw at the last one. That helped make even the best shows seem less special.

The Web itself has been a factor. Some companies that used big shows for product announcements have learned that they can get people's attention in other ways and that the Net is the world's greatest exhibit floor, especially for demonstrating software.

So why are some shows still alive, if not thriving? Because for all the reasons not to go, there is still plenty of reasons to attend even now.

Knowing general trends is fine, but there's nothing like seeing the entire trade lined up side after side. Shows are also the place for meetings. When

so many executives and product managers turn up in one place, the expression "fish in a barrel" comes to mind. Many companies do their most important schmoozing off the show floor in hotel suites surrounding convention centers, showing their best wares to their biggest users.

Finally, don't forget the serendipity factor. I always meet new people or unexpectedly run into old acquaintances, and those encounters can be valuable. As every show I attend, moreover, I walk the outer reaches of the exhibit floors, visiting the cheaper-to-rent booths that get much less traffic because of their locations. Invariably, I come across a product or company that isn't just on the edge of the floor, but also on the cutting edge of its field. My bottom line: I'm more picky now. But I won't stop attending conventions entirely. ■

READERS' LETTERS

H-B Sale Effect

FOUND YOUR article "Congress May Bear Brunt of H-B Angst" [QuickLink 32229] very interesting. Being among the many unemployed technology professionals for more than a year now, I feel that the Congress who created this mess should be grateful, and a boost out of office. But there is one very amusing aside to the mess: In the last few months, the recruiters I talk with regularly are being quietly replaced by the H-B people they hired only a year or so ago. *Wigil Anderson*
Senior consultant
Kernersville, N.C.

Unreported Costs

IT'S INTERESTING that Computerworld is devoted to advanced technologies and the future of systems integration, and yet it fails to cover the most fundamental structure necessary to accommodate the connectivity and integration you are referring. Without a properly designed computer and fiber infrastructure, changes in technology direction will be so costly as to

render any ROI impotent in the face of economic downturn. For example, there's little opportunity to convince management that VOIP is cost-effective when the data center design can't accommodate the change requirements without significant overhaul.

If you're wondering how I know all this, I was vice president of global infrastructure at Citibank for a number of years and instituted a design and methods policy that allows upgrades without disruption. The real world is a lot more complicated than the high-level applications world that many of your articles describe.

Martin Zuckerman
Director
Tuesdale Inc.
New York
m.zuckerman@tuesdale.org

Eliminating Paper

I LIKED that the column "9/11 Prompts Paper Chase out the Door" [QuickLink 32533] provided a concrete example of how an IT process actually added value to an organization, both by enabling more collaboration and making it easier to access documents

across the organization (and cut down on paper waste). Most organizations I have contact with don't even try to educate employees on using electronic documents and report-viewers to save on paper; everyone still prints everything. Perhaps it's time for industrial-strength sticky notes or an association software package that will gain widespread adoption.

George Rios
Decision-support manager
Loma Linda, Cal.

Remotely Accurate

IN THE 20 YEARS I've been consulting in the telecommuting field, I don't remember seeing an indictment of this work practice that is more inaccurate and unfounded than David Zimmer's letter in the Aug. 26 issue [QuickLink 31925]. The government was never "levying penalties if companies didn't institute telecommuting." The Clean Air Act amendments required some employers in some areas to find ways to reduce the number of vehicles their employees drove to work, but telecommuting was neither mandated nor was it

penalty punished. And telecommuters aren't "routinely passed over for promotions and special projects" (while this may happen sometimes, it's much more common that telecommuters' managers report those employees to be more promotable and more capable of broader responsibilities). The biggest obstacles to telecommuting, as Zimmer suggests, are management attitudes about remote work. I've often told clients that the biggest obstacle to telecommuting is the wealth of myth and misinformation about exactly what it is, how it works and how easily it can be tailored to meet business needs. *Bill Gordon*
Gil Gordon Associates
Mumfords Junction, N.J.

COMPUTERWORLD welcomes comments from its readers. Letters will be edited for brevity and clarity. They should be addressed to *Jane Eddle*, letters editor, Computerworld, PO Box 9171, 500 Old Connecticut Path, Framingham, Mass. 01701. E-mail: letters@computerworld.com. Include an address and phone number for immediate verification.

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TECHNOLOGY

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THIS WEEK



TOP-FLIGHT TECHNOLOGY

COMPUTERWORLD INNOVATIVE TECHNOLOGY Last spring, Computerworld asked IT customers to nominate vendors offering leading-edge products and services that provide measurable payback on investment. Computerworld editors and a panel of outside experts sorted through the 200 nominations we received and selected the winners of the Innovative Technology Awards 2002, the first in what will be an annual recognition of excellence. The winners are:

ENTERPRISE SYSTEMS

- ArborNet Inc.
- IBM
- Metra Tech Corp.

SECURITY

- BloomX Inc.
- Moxa Networks Inc.
- Entrust Security Technologies

E-COMMERCE

- Cyberspace Commerce Inc.

DATA MANAGEMENT

- Strativity Inc.
- Software AG

WIRELESS

- Terabeam Corp.

Read more about these companies and see our list of the 10 companies that received honorable mention recognition. **PAGE 26.**

ALSO THIS ISSUE

Vince Tuesday turns detective to find a potential hacker from inside the corporate firewall.

PAGE 30

ROBERT L. MITCHELL

Innovation Is the Object

INNOVATION IS A CONCEPT in danger of being permanently devalued by overuse and relegated to the realm of marketingspeak. As our Innovative Technologies special report in the following pages shows, what IT managers see as innovation has nothing to do with hype. It's all about making their companies run more effectively and efficiently.

And sometimes innovation is based on something as prosaic as a new standard, like the one under consideration right now that could literally become a blockbuster for enterprise storage. The T10 Technical Committee, part of the International Committee on Information Technology Standards, is working on the Object-Based Storage Device Commands (OSD) standard. OSD will turn files, records, directories and other storage elements into objects that storage management software can access using an extended SCSI-3 command set.

Storage managers (think file systems like New Technology File System, or NTFS, and databases like Oracle) need no longer write and manage physical data blocks. That job will move into the SCSI storage device itself, along with the metadata and attributes required for the device to internally manage those stored objects.

What's in it for you? By breaking away those block-level and metadata management chores, OSD reduces the storage manager's job to one of simply mapping files and file structures to objects. That should lead to better interoperability and set the stage for convergence of storage-area network (SAN) and network-attached storage (NAS) technologies. OSD-compliant storage managers will be able to share data on the same device. Theoretically, backups initiated on a Windows file system could even be restored to a Solaris file system (in the unlikely event that both could agree on a common, shared attribute set) because the data and its attributes have been effectively separated from the operating system.

So OSD makes it possible for vendors to create a universal file system (which operating system vendors will surely resist), and brings a cross-platform capability that today's proprietary SANs lack. OSD also logically separates control and management information from the data path, which means applications don't suffer the latency penalties associated with going through an intermediate file system, such as a NAS fileer. OSD essentially combines the direct-

write performance of SANs and the cross-platform benefits of NAS. And moving object metadata and attributes out of the file system also allows for more scalable storage, eliminating the file server or NAS filer head as a scalability choke point. The argument over whether to serve up NAS-style files or SAN-style blocks goes away: Object-based storage should drive convergence from the ground up.

Another potential benefit of OSD is its ability to improve data security. Today, disk-level security is limited to crude tools such as LUN masking and zoning. OSD will make this more granular. "Because objects are self-describing, you can ascribe a security domain to each one," says Michael Mesnier, a storage architect at Intel and co-chairman of the Storage Networking Industry Association's OSD

Technical Working Group, which developed the specification. With OSD, the user (called an initiator) must present a key to the storage device before it grants access to the requested data. The file system determines the user authorization and key distribution methodology; the OSD-based device enforces it.

While OSD will drive convergence, it won't make the SAN/NAS debate go away anytime soon. That's because the specification doesn't address how data should be transported. Both architectures will continue to evolve as object-based storage emerges, but distinctions between them will blur.

IT isn't likely to see the benefits of object-based storage until a new generation of intelligent (and more expensive) OSD-compliant SCSI drives and file managers appears. That will take time. For example, Microsoft's long-promised object-based file system, code-named Longhorn, will morph NTFS into an object database. But it won't arrive until at least 2006, and its support for OSD is unclear.

Nonetheless, Mesnier predicts a base OSD standard by year's end. Intel is building an open-source reference implementation, which Mesnier says it will release this fall. The question that remains is whether vendors will run with it. ■

MORE ON OSD

Additional info on the storage device standard is online.
 @ Digital Link 32594
www.computerworld.com



ROBERT L. MITCHELL
 is Computerworld's
 technology editor.
 e-mail: robert_mitchell@computerworld.com

First Annual INNOVATIVE TECHNOLOGY AWARDS 2002

HOW WE CHOSE THE WINNERS

During May and June, Computerworld invited IT customers - those companies that use technology but don't produce or sell it - to nominate vendors they believe offer leading-edge technology products or services that provide measurable payback. We received approximately 200 nominations. Successful vendor candidates had to be nominated by a customer who was currently using the technology. Customer nominations were verified by Computerworld by phone.

Computerworld then surveyed those vendors, asking specific questions about the nominated technology. Those surveys were first vetted by a panel of Computerworld editors and then divided among a 15-person panel of IT influencers for evaluation.

Our outside panelists were Michael Agnew, systems integration manager at Linens 'n Things Inc.; Jon Carrow, director, global IT sourcing and acquisitions, at Wyeth Pharmaceuticals; Faith A. Bughmans, vice president, enterprise engineering group, at Sica & Co.; Melvyn Heints, staff director at the Federal Reserve Bank of New York; Frank Hood, vice president of information services at Kelsey Seavey Doughnut Corp.; Cathy Hotta, vice president of IT at the National Retail Federation; Barry Kuehn, COO and vice president of information systems at Securus USA Inc.; Anthony Olmogy, vice president of IT at Selectic Ltd.; Jeff Orton, COO and vice president of logistics at Wilco's The Leather Experts Inc.; Larry Patterson, vice president of computer technical services at Global Information Network; Andre Mendes, chief technology integration officer at the Public Broadcasting Service; Patricia Tate, executive director of the Technology Managers Forum; M. Lewis Torrens, vice president/COO and dean of engineering at the University of Miami; John Wodler, senior vice president and chief technology officer at Black & Veatch Corp.; and Patrick Wius, vice president of e-commerce at Landstar System Inc.

Evaluations were based on the following criteria:

- The company's technology is innovative and original.
- It offers demonstrable value to corporate IT operations in Fortune 1,000 companies.
- It creates a new advantage or opportunity for customers.
- Customers have successfully implemented the technology and are getting measurable payback or competitive advantage from it.
- The technology will continue to change the way companies do business or solve technology problems into the future.

The 10 winners and 10 honorable mentions are presented here.

Top-flight TECHNOLOGY

COMPUTERWORLD
INNOVATIVE
TECHNOLOGY
2002

Computerworld's customer choice awards honor 10 vendors that offer cutting-edge technology that's creating business value for their customers.

Arbortext Inc.

CATEGORY: Enterprise systems

URL: www.arbortext.com

LOCATION: Ann Arbor, Mich.

FOUNDED: 1982

TECHNOLOGY: Epic, XML software for publishing content dynamically

KEY CUSTOMERS: American Express Co., Ford Motor Co., The Boeing Co.

HOW IT WORKS: Based on XML and related standards, Arbortext's Epic Editor is used to create information in a media-independent format that can be stored on a file system or in a content management system. Epic creates a single XML-based source of information and automates the publishing to all types of media, including the Web, print, CD-ROM and wireless devices. The software constrains the author on the structure and content of the information conforms to the XML data model the system designer specifies. Because of these con-

Continued on page 28





ANYWARE™ The downside: your walk through the parking lot was long. The upside: it gave you time to think about a way to eliminate the high cost and hassles of overnight delivery.

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imageRUNNER™ Solutions



Canon KNOW HOW™

Continued from page 26

straints, the information is consistent across all platforms. Out of the box, Epic Editor works with file systems and Documentation Inc.'s Documentation 4i. An optional adapter integrates Epic Editor with Oracle Corp.'s iBFS repository. Also available are integrations with repositories from Emporis GmbH and Zyxtron Enterprise Solutions. Epic Editor is compatible with Windows 95, 98, 2000 and NT 4.0, and Solaris 7 and 8.

TIP: "The ultimate success of your implementation depends on your data model, so that's the one area where you must not skimp," says P.G. Bartlett, a spokesman for ArborText. "Whatever investment you make in outside expertise will be returned many times in lower implementation costs and greater rewards."

BY LINDA ROSENCRANCE

Flight delays can be extremely infuriating, for business travelers in particular.

Many of these delays can be traced to aircraft maintenance — the time-consuming task of ensuring that each plane is inspected and repaired before

every flight. And it's crucial for mechanics to be able to quickly locate the information they need to make repairs, because the faster they can do their jobs, the faster the planes get back in the air.

US Airways Group Inc., for example, must create, publish and maintain more than 10 different publications that support the maintenance of its entire fleet of 300 aircraft, which handle more than 1,400 flights every day. Finding the right information used to take US Airways' mechanics as long as 15 minutes using a combination of microfilm and paper documents, says Stanley Davis, manager of electronic publications at the Arlington, Va.-based airline.

To shorten those delays, the airline

turned to publishing software from Ann Arbor, Mich.-based ArborText Inc. to overhaul its documentation production process and convert its manuals from print to an electronic format, says Davis.

Using Epic Editor, ArborText's XML-based authoring and editing software, US Airways created a central data store of content components that can easily be searched, managed, tracked and improved, Davis explains. Changes that occur in one manual are now easily reflected in other manuals.

"The new documentation process allows users to share information across several different organizations and computer platforms in the most efficient manner," Davis says. "It now takes a mechanic about two or three minutes to find the information he needs."

BioconX Inc.

CATEGORY: Security

URL: www.bioconx.com

LOCATION: Minneapolis

FOUNDED: 1999

TECHNOLOGY: Network security software based on biometric authentication, which replaces passwords with enterprise single sign-on

KEY CUSTOMERS: Antelope Valley Health Care District, DialAmerica Marketing Inc.

HOW IT WORKS: BioconX software identifies users' fingerprints by looking for unique swirls; each unusual spot in the fingerprint is "marked" by the software as a personal characteristic. A user is authenticated when his fingerprint matches a previously scanned series of unique swirl characteristics.

TIP: BioconX Chief Technology Officer Don Harris says the software can accurately identify fingerprints more than 99% of the time. The software works with the user directories of Microsoft Corp. and Novell Inc. network operating systems to authenticate a user; once identified, users gain access to all the applications they're entitled to use.

BY STEVE ALEXANDER

Hospitals facing new government requirements for privacy of patient medical records are looking for better ways to authenticate users of their networks.

Antelope Valley Health Care District, which operates a community hospital and eight medical clinics in Lancaster, Calif., chose fingerprint identification software from BioconX Inc. in Minneapolis.

Ash I. Shehata, director of information systems and telecommunications at Antelope Valley, says the BioconX network security software "was the only application we could find that let us achieve multiple secure log-ons on a single workstation." Maintaining separate security for multiple users on each workstation was important to the 2,000-employee health-care organization because improved computer security and data privacy will be required by the Health Insurance Portability and Accountability Act by April 14, 2003. Shehata says he found fingerprint identification using mouse readers to be more secure than typed-in passwords and more reliable than token-card electronic password devices.

"Users forget to bring the devices to work. But it's hard to forget to bring your finger," he says.

Equally important, the BioconX user

identification approach was affordable.

That's partly because mouse fingerprint readers now cost about \$120 and partly because the BioconX product doesn't require the modification of source code on the 60 applications to which it provides authentication, Shehata says. The cost per user is \$200, which includes the BioconX software, the server on which it runs and the mouse reader from Siemens AG. ■

HONORABLE MENTIONS

APPLICATION DEVELOPMENT

ClientSoft Inc.

LOCATION: Miami

URL: www.clientsoft.com

FOUNDED: 1987

TECHNOLOGY: ClientSoft Target Objects

KEY CUSTOMER: Penn Mutual Life Insurance Co.

WHAT IT DOES: A development platform and runtime environment for IBM CICS integration that allows users to extend core legacy systems to modern media such as browser-based Internet applications.

Metastorm Inc.

LOCATION: Severna Park, Md.

URL: www.metastorm.com

FOUNDED: 1996

TECHNOLOGY: E-work

KEY CUSTOMERS: City of Bakersfield, Calif., McKenna & Conne LLP

WHAT IT DOES: Application integration software that automates people-intensive and paper-based tasks. Flexible, scalable and compatible with legacy systems.

CUSTOMER RELATIONSHIP MANAGEMENT

Astute Inc.

LOCATION: Columbus, Ohio

URL: www.astutesolutions.com

FOUNDED: 1996

TECHNOLOGY: PowerCenter

KEY CUSTOMERS: McDonald's Corp., L'Oreal SA, Levi Strauss & Co.

WHAT IT DOES: Provides a one-to-one consumer response system that integrates customer data and communication channels to improve responsiveness of customer service representatives.

Profiles continue on page 30

Continued from page 26

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1U Form Factor

- Three-Year Rapid Exchange

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quantum.com/new4400

Mazu Networks Inc.

CATEGORY: Security

URL: www.mazunetworks.com

LOCATION: Cambridge, Mass.

FOUNDED: 2000

TECHNOLOGY: Security systems to prevent distributed denial-of-service (DDOS) attacks based on fast packet-processing technology

KEY CUSTOMERS: MTV Networks (operates the MTV, VH-1 and Nickelodeon channels), New York Mercantile Exchange Inc.

HOW IT WORKS: Mazu's Enforcer builds a statistical model of Web site traffic when no attack is occurring, says Carty Castaldi, vice president of engineering at the company. During a DDOS attack, Enforcer identifies data packets associated with the attack based on their statistical differences from the norm and recommends a filter that typically blocks 80% of the attack packets and about 5% of legitimate packets, he says.

TIP: Enforcer is good but not foolproof. It works best when there is no variation in the attacking packets. But some attackers switch the packet types midattack, reducing Enforcer's effectiveness until it can re-analyze the situation and recommend a different filter. The more varied the attack, the less effective Enforcer is.

BY STEVE ALEXANDER

MTV.com, the Web site for the cable TV music channel, is the target of DDOS attacks each fall when the MTV Video Music Awards are televised. But the attacks, in which servers are deliberately overloaded by heavy traffic, are now blunted because New York-based MTV Networks is protecting its 15- to

tertainment Web sites with Enforcer, a defensive tool from Mazu Networks Inc. in Cambridge, Mass.

"During the MTV Awards and other highly publicized TV events, some folks try to knock us out of the water," says Brian Amirian, director of Web hosting and development at MTV Networks Online Technology. So last year, MTV attached Mazu's Enforcer to gigabit uplinks between the MTV Web sites and the company's Internet service provider.

Amirian says one reason he selected Mazu's product is the efficient way it uses proprietary hardware to filter out DDOS attacks. Some other products that he evaluated but rejected used software that relied on the more limited filtering capabilities of existing network routers.

According to Amirian's calculations, he recouped the \$32,000 investment in Enforcer within about two months because the Mazu device kept MTV's Web site from being disrupted during the heavy advertising period surrounding the Video Music Awards. ▀

Alexander is a freelance writer in Edina, Minn. You can contact him at searion29@yahoo.com.

IBM

CATEGORY: Enterprise systems

URL: www.ibm.com

LOCATION: Armonk, N.Y.

FOUNDED: 1911

TECHNOLOGY: Samsetime, the first instant messaging and e-meeting technology built specifically for corporations

KEY CUSTOMERS: Shaw Pittman LLP (a multinational law firm), Ryder System Inc.

HOW IT WORKS: Samsetime provides secure real-time instant messaging capabilities for businesses by integrating the software directly into their corporate networks. Systems administrators have full control over who can view corporate information, while also ensuring that only employees can send messages within the system, which differs from free instant messaging software such as Yahoo Inc.'s Messenger.

TIP: Samsetime is easy to install but must be specifically configured to operate through ports in corporate firewalls.



BRIAN AMIRIAN, director of Web hosting and development at MTV Networks Online Technology, says Mazu's Enforcer protected the site from denial-of-service attacks.

BY TODD R. WEISS

The old ways of communication just weren't cutting it anymore at the law firm of Beckman & Hirsch PLC.

Using intercoms and internal e-mail systems, the attorneys and staff in the 10-person Burlington, Iowa-based practice were continually having to halt their meetings with clients and other work to talk on the intercom or check for e-mail.

But that's all changed since Beckman & Hirsch adopted IBM's Lotus Samsetime, a corporate instant messaging and electronic meeting application that's helping the firm react to messages and information with fewer distractions.

David Beckman, one of the principals at the law firm, says his personal secretary moved to another town, but that hasn't created a ripple in how they work together. "I can do my work and never realize that the secretary handling this is 100 miles away," he says.

When using e-mail or intercoms, employees have to stop and check for messages or react when the intercom sounds. But with Samsetime, staff members can quietly and efficiently respond to one another through pop-up messages on their computer screens, even while they're on the phone, increasing their productivity and billable hours.



Also available are collaboration tools such as whiteboards that allow people to work together in real time.

Beckman says Samsetime offers major benefits to his business, such as secure communications and encryption — features not found in the free instant messaging applications available on the Internet, including Yahoo Messenger and America Online Inc.'s Instant Messenger. "It isn't just 'Go on AOL and everybody get in a chat room,'" Beckman says. "Particularly in the legal field, confidentiality is important." ▀

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Profiles continue on page 32



SAS[®] is all you need to know.

Entercept Security Technologies

CATEGORY: Security

URL: www.entercept.com

LOCATION: Raleigh, N.C.

FOUNDED: 1996

TECHNOLOGY: Entercept, a server security system that uses behavioral rules and signatures to identify anomalous behavior and block attacks in real time

KEY CUSTOMERS: First Citizens Bank, Corio Inc.

HOW IT WORKS: Entercept provides intrusion-detection and prevention software for host and application servers and will soon expand the capability to database servers. The software decides whether to permit a system call inside a server based on the signature of the call or behavior rules. For example, if a hacker were sending a password file on a Web server, that behavior would be contrary to the normal behavior of someone accessing a Web page and wouldn't be allowed.

Cyclone Commerce Inc.

CATEGORY: E-commerce

URL: www.cyclonecommerce.com

LOCATION: Scottsdale, Ariz.

FOUNDED: 1996

TECHNOLOGY: Provides secure, profile-based, easy-to-configure Web connections to trading partners

KEY CUSTOMERS: Do It Best Corp., Allergiance Healthcare

HOW IT WORKS: Cyclone's software offers a quick, easy and secure way for companies to connect via the Internet to their trading partners, regardless of their preferences for data type, communication protocols or security infrastructure. The Java-based software relies on a profile-driven interface to run connections to internal applications and other software, to enable traffic to travel back and forth seamlessly.

TIP: Users should be aware of hidden costs. For instance, their partners may not be able to afford to link up using the required client software.

TIP: Be aware that host-based intrusion-prevention software must be installed on every server, including the ones it doesn't know about, and run constantly.

BY MATT HAMBLEN

First Citizens Bank in Raleigh, N.C., implemented an intrusion-detection system from Entercept Security Technologies just in time back in March 2000.

The Code Red worm hit three days after the bank installed Entercept on customer-related Internet-facing servers, and the Nimda virus hit shortly after that, says Jay Ward, senior network security analyst at First Citizens.

"But we kept humming along without skipping a beat, so I'd say yes, that was a definite return on investment," he says. "When the CIO asked me why we weren't hit when some of our peers' internal networks were down for up to three days, I told him it was ... Entercept."

The product was unique at the time, blocking malicious attacks near the kernel level, Ward says. But analysts say Entercept now faces competitors such as Okena Inc. in Waltham, Mass., and Harris Corp. in Melbourne, Fla.

BY MARC L. BOWEN

Companies looking to automate their supply chain connections are faced with the daunting task of integrating their enterprise resource planning and other related systems with partners. Problem is, those partners often use a wide variety of communications protocols and other technologies, such as electronic data interchange (EDI), frame relay and others. Investing in a private communications link can prove extremely expensive and time-consuming.

Enter Cyclone Commerce, which offers software that stores profiles of different partners and their technologies and can route data to the appropriate personnel and applications in a company.

At San Francisco-based McKesson

One big advantage Entercept offered First Citizens is that it gave administrators time to thoroughly test patches and then apply them. Some vendors had told the bank they couldn't support the servers if the patches were installed by bank officials, and First Citizens decided that waiting for the vendors to install the systems would take too long, Ward says.

Because host-based intrusion-prevention software must be installed on every server, it can be very expensive, notes Garner Inc. analyst John Pescatore. But a \$1,595 Entercept Web server provides such good protection that it's worth the price, Ward says. ■

WHAT IS IN STORE?

Corp., a health care distribution company, there was a need to manage the large amounts of traffic moving between it and its customers, some of whom were huge retail chains requiring very robust interfaces. Each time a new customer was added, McKesson had to hand-code a

new interface.

Paul Fowler, vice president of e-business solutions at McKesson, says that two years ago, the firm installed Cyclone's Central product. "It is essentially a connector that allows us to quickly configure connectivity to other people's financial systems and orders. We consider it a data switch," says Fowler.

McKesson can now add partners on the fly, without the time and expense of hand-coding, he adds. ■

HONORABLE MENTIONS

eXcelon Corp.

LOCATION: Burlington, Mass.

URL: www.exceloncorp.com

FOUNDED: 2001

TECHNOLOGY: XIS

KEY CUSTOMERS: Amazon.com Inc., NTT DoCoMo

WHAT IT DOES: An XML database management system that solves integration problems for enterprise-grade applications.

Fortinet Inc.

LOCATION: Santa Clara, Calif.

URL: www.fortinet.com

FOUNDED: 2000

TECHNOLOGY: Fortigate network protection gateways

KEY CUSTOMER: Agile Software Corp.

WHAT IT DOES: Protects against network-borne threats. Supports network-based deployment of application-level services.

Foundry Networks Inc.

LOCATION: San Jose

URL: www.foundrynetworks.com

FOUNDED: 1996

TECHNOLOGY: 10-Gigabit Ethernet 802.3ae

KEY CUSTOMER: University of Southern California

WHAT IT DOES: Delivers 10-Gigabit services to connect backbone switches/routers, simplifying network connectivity.

Ultra-Scan Corp.

LOCATION: Amherst, N.Y.

URL: www.ultra-scan.com

FOUNDED: 1995

TECHNOLOGY: Ultrasonic fingerprint identification system

KEY CUSTOMER: ATESA, a Chilean HMO consortium

WHAT IT DOES: Checks fingerprints against a database.

Profiles continue on page 34

Entercept Security Technologies

CATEGORY: Security

URL: www.entercept.com

LOCATION: Raleigh, N.C.

FOUNDED: 1990

TECHNOLOGY: Entercept, a server security system that uses behavioral rules and signatures to identify anomalous behavior and block attacks in real time

KEY CUSTOMERS: First Citizens Bank, Cerie Inc.

HOW IT WORKS: Entercept provides intrusion-detection and prevention software for host and application servers and will soon expand the capability to database servers. The software decides whether to permit a system call inside a server based on the signature of the call or behavior rules. For example, if a hacker were sending a password file on a Web server, that behavior would be contrary to the normal behavior of someone accessing a Web page and wouldn't be allowed.

TIP: Be aware that host-based intrusion-prevention software must be installed on every server, including the ones IT doesn't know about, and run constantly.

BY MATT HAMBLEN

First Citizens Bank in Raleigh, N.C., implemented an intrusion-detection system from Entercept Security Technologies just in time back in March 2000.

The Code Red worm hit three days after the bank installed Entercept on customer-related Internet-facing servers, and the Nimda virus hit shortly after that, says Jay Ward, senior network security analyst at First Citizens.

"But we kept humming along without skipping a beat, so I'd say yes, that was a definite return on investment," he says. "When the CIO asked me why we weren't hit when some of our peers' internal networks were down for up to three days, I told him it was ... Entercept."

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Cyclone Commerce Inc.

CATEGORY: E-commerce

URL: www.cyclonecommerce.com

LOCATION: Scottsdale, Ariz.

FOUNDED: 1996

TECHNOLOGY: Provides secure, profile-based, easy-to-configure Web connections to trading partners

KEY CUSTOMERS: De Beers Corp., Allphance Healthcare

HOW IT WORKS: Cyclone's software offers a quick, easy and secure way for companies to connect via the Internet to their trading partners, regardless of their preferences for data type, communication protocols or security infrastructures. The Java-based software relies on a profile-driven interface to run connections to internal applications and other software, to enable traffic to travel back and forth seamlessly.

TIP: Users should be aware of hidden costs. For instance, their partners may not be able to afford to link up using the required client software.

BY MARC L. BROWNE

Companies looking to automate their supply chain connections are faced with the daunting task of integrating their enterprise resource planning and other related systems with partners. Problem is, those partners often use a wide variety of communications protocols and other technologies, such as electronic data interchange (EDI), frame relay and others. Investing in a private communications linkup can prove extremely expensive and time-consuming.

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Profiles continue on page 34



**FROM ORACLE TO
BIA TO SIEBEL,
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storage software company

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Stratify Inc.

CATEGORY: Data management

URL: www.stratify.com

LOCATION: Mountain View, Calif.

FOUNDED: 1999

TECHNOLOGY: Stratify Discovery System, software that automates the organization and classification of unstructured data

KEY CUSTOMERS: Bell Canada, U.S. Department of Education

HOW IT WORKS: Stratify's software will comb through the millions of documents in an enterprise, look at patterns in the words, sort them into various groups, and allow a company to create a portal that could be similar to Yahoo Inc.'s search structure, with data presented in hierarchical fashion, as well as provide tools to extract data. It can also tie in relevant data from the Internet. Says Chief Technology Officer Romana Verulata, "Knowledge is power. If you don't know what you got, you don't have it - you don't have power."

TIP: Stratify's system has the ability to reach deep into a system, including a user's e-mails. End users need to address access policy issues.

BY PATRICK THIBODEAU

The hundreds, or perhaps many thousands, of e-mail messages, Web pages, documents, PowerPoint presentations and other text files stored on your laptop hard drive are called unstructured data. They're not filed well, and keyword searches are often frustrating.

Now imagine that same problem across an enterprise, with millions of text documents, the accumulated knowledge of your company, stored in thousands of servers. It's a much bigger mess.

One company that's dealing with large volumes of similarly unstruc-

tured data is Knowledge Corp. in Burlington, Mass., a content provider for business Web sites. It turned to knowledge management company Stratify Inc. to help it process the tens of thousands of news stories, press releases and other material that it receives daily.

NewsEdge's problem is ensuring it catches everything. Editors read stories, look for new trends and technologies and write system rules to catch future references. The data is then put in the appropriate category or taxonomy.

Terabeam Corp.

CATEGORY: Wireless

URL: www.terabeam.com

LOCATION: Kirkland, Wash.

FOUNDED: 1997

TECHNOLOGY: Fiberless optics, which beams the same light used in fiber optic cables through the air - straight through office windows

KEY CUSTOMERS: Overlake Hospital Medical Center, Fisher Communications (TV and radio stations)

HOW IT WORKS: Terabeam's Free Space Optical Technology uses lasers operating at 1,550 nanometers, far above visible light, eliminating the possibility of eye damage caused by other lasers. It uses computer-controlled steering mirrors to ensure tight beams. Its range is about 600 feet to three miles depending on the weather. The company offers two models: Elliptica, which has a throughput of 155M bit/sec, and Magna, which has throughput of 10 Gbit/sec.

TIP: Free space optical communications systems don't have the security holes found in wireless bridges, but users should be aware that they work best in locations with little rain or fog, which can cut throughput or completely block a signal.

BY BOB AREWIS

Running a high-end hotel in a technology hub such as Seattle requires giving round warriors more than just a room. Visitors to nearby Microsoft Corp. and other high-tech companies such as RealNetworks Inc. expect high-bandwidth Internet connections.

Satisfying the wideband thirst of a guest population that varies from day to day in a hotel with more than 400 rooms is a challenge, but one that the

But with so much information flowing in "it just quickly gets out of hand," says Steve Samler, architect of content.

NewsEdge picked Stratify because it wanted a system that had the ability to learn, discover new topics, write rules and incorporate those findings in NewsEdge's own taxonomy. And unlike some other knowledge management vendors that wanted to completely automate the system, Stratify's system was flexible enough to ensure human intervention. There's no substitute for human judgment, says Samler. ■



Elliott Grand Hyatt Hotel in downtown Seattle has met with a flexible bandwidth service from Terabeam, says the hotel's general manager, Doug Sears.

If Sears anticipates greater than normal demand for high-bandwidth connection to guest rooms or the hotel's auditorium - which has each of its 160 seats equipped with an Ethernet jack - all he has to do is order up more bandwidth from Terabeam. Terabeam, which manufactures free-space optical systems and also serves as a local carrier in Seattle, has mounted a dish on the hotel's roof, which uses free space optical telecommunications technology to hook into the hub of a major telecommunications carrier about 800 feet from the hotel.

Loe Gellos, a Terabeam spokesman, declines to identify the carrier, but did say the arrangement allows Terabeam to boost the Elliott Grand's capacity at a flick of a switch from 5 to 100 megabits. That's important, Sears says, when a large number of guests check in expecting high-speed connections at the same time, such as during a RealNetworks conference earlier this year.

Gellos says Terabeam's free space optical technology (fiber without the wires) makes tying a hotel into a high-speed hub easy, since it doesn't require digging up the street. Installing a dish on the roof does the job. ■

HONORABLE MENTIONS

Waveset Technologies Inc.

LOCATION: Austin, Texas

URL: www.waveset.com

FOUNDED: 2000

TECHNOLOGY: Waveset Lighthouse

KEY CUSTOMERS: OMAC Financial Services, the American Red Cross, Burlington Northern Santa Fe Railway Corp.

WHAT IT DOES: Automates security provisioning of business information systems across enterprise, intranet and extranet environments.

Formation Systems Inc.

LOCATION: Southboro, Mass.

URL: www.formation-systems.com

FOUNDED: 1995

TECHNOLOGY: Optiva

KEY CUSTOMERS: The Coca-Cola Co., Smith's Bakeries LLC

WHAT IT DOES: Collaboration software automates product development and commercialization, reducing the time and resources required to take a product from idea through product launch.

Air2Web Inc.

LOCATION: Atlanta

URL: www.air2web.com

FOUNDED: 1999

TECHNOLOGY: Mobile Internet Platform, a wireless application gateway

KEY CUSTOMERS: ADC Telecommunications Inc., United Parcel Services Inc.

WHAT IT DOES: Extends corporate data, back-end information systems, e-mail and Web site content to mobile users.

Profiles continue on page 36

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FOUNDED: 1995

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Profiles continue on page 36

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MetraTech Corp.

CATEGORY: Enterprise systems

URL: www.metrattech.com

LOCATION: Wallham, Mass.

FOUNDED: 1996

TECHNOLOGY: MetraNet, a Web services-based billing system that uses XML technology

KEY CUSTOMERS: BCE (subsidiary of Bell Canada), British Telecom Conferencing

HOW IT WORKS: The MetraNet billing platform enables communications service providers to dynamically offer new services and package existing services in new ways. Customers can integrate the system with their existing infrastructure and third-party applications and provide pricing, revenue sharing and billing capabilities using XML and plug-and-play Web services.

TIP: According to Jim Culbert, vice president of technology at MetraTech, there are some standard requirements for the system, like processor level. "When we engage with a customer, we have a fairly detailed set of business process we go through," says Culbert. "We first figure out what they're doing from a business perspective."

BY THOMAS HOFFMAN

ACT Teleconferencing Inc. is a prime example of how MetraTech Corp.'s MetraNet Web-based billing and revenue sharing system is helping companies solve business problems and cut costs.

In late 1990, the Golden, Colorado-based provider of audio, video, data and Internet conferencing products and services began building a home-grown billing system to help it support its 20 domestic and international call centers, many of which had been picked up through acquisitions. Problem was, these call centers ran disparate billing systems that weren't well integrated. ACT executives decided at the time to go with a "build vs. buy" approach to creating a single, standardized billing system because there didn't appear to be any third-party billing systems on the market that could meet its needs and support multiple languages.

Teleconferencing and videoconferencing "is a difficult business to build" be-



cause billing isn't simply a matter of multiplying minutes times price. It involves a combination of tiered services purchased, such as having a "live" operator on a conference call or a Web stream attached to a conference, says ACT Chief Technology Officer Mark Kelly, who works out of the company's Ottawa office.

Enter MetraTech. After a MetraTech representative contacted ACT about its MetraNet system, the conferencing services provider quickly saw the benefits that the XML-driven billing system could deliver.

Since installing the MetraNet system, ACT has been able to shrink its billing cycles from 30 days to one day and receive payments from customers 20 to 40 days faster than before. In addition, ACT has saved "a couple of million dollars a year" through improved billing accuracy, eliminating rebilling and having a smaller support staff to maintain a single billing system, says Kelly. He estimates that the MetraNet system paid for itself in 18 to 24 months.

"If it typically takes 45 to 60 days to render invoices, then you're essentially funding customers for that time and impacting your cash flow," says Kelly. "The more you compress and shrink that billing cycle, the [more] free cash you generate."

"We recommend that customers have a good understanding of how XML fits into their overall IT strategy, say in document management or in B2B supply chain areas," says MetraTech's Jim Culbert. "If the customer isn't up to speed on that, we have a professional services arm that helps out as well." ■



Software AG

CATEGORY: Data management

URL: www.softwareag.com

LOCATION: Reston, Va.

FOUNDED: 1969

TECHNOLOGY: Taminio XML Server, an XML server for Internet database management. Processes XML documents natively

KEY CUSTOMERS: DaimlerChrysler AG, Virginia Polytechnic Institute and State University

HOW IT WORKS: Taminio XML Server makes storing, processing and retrieving XML data easier and faster compared with traditional relational database management systems where XML data has to be modified and reconstructed every time it is stored or retrieved. "Taminio is high-performance native XML server for storing and publishing XML document in support of e-business applications," says Karen Duda, a product manager at Software AG.

TIP: As with any database, modeling your data to represent relationships among elements is a key aspect of the planning process.

BY JAHNKAAR VIJAYAN

As a company focused on specialized distribution and logistics services, North American Logistics has been a longtime user of electronic data interchange (EDI) for exchanging different types of data between its networks and those of its customers and supply chain partners.

But all that is starting to change. Under increased pressure from some of its high-technology customers and in a bid to reduce the traditional value-added network (VAN) translator costs that are asso-

ciated with EDI, North American Logistics has recently started using XML for its business-to-business data exchange.

This Web-based approach aligns North American Logistics' capabilities more closely with those of its partners, says CIO Ann M. Harten. And it offers the logistics provider, which is a service of Fort Wayne, Ind.-based North American Van Lines Inc., a relatively easier way to exchange different types of data than EDI does, while making the data exchange process faster and more efficient.

The company won't completely abandon EDI anytime soon. But in each of the past three years, Harten says she expects that North American Logistics' XML traffic will move at least 10% of its EDI traffic over to XML. The goal, she says, is to eliminate at least \$400,000, or 15%, from the \$300,000 the company spends currently on VAN costs each year.

Playing a central role in this transformation is Taminio XML Server, a native XML database from Software AG. The database allows

North American Logistics to store and process XML documents natively without any transformation.

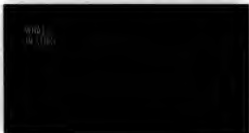
In traditional relational database management systems, XML data has to be modified and reconstructed each time it's stored or retrieved, according to Software AG's Karen Duda. Taminio XML Server makes that process faster.

This makes it a good technology for applications where reliable and fast exchange of XML data is important, she says.

Taminio was first out of the blocks and is the current market leader, but vendors like Isis Soft Inc. and NeoCore offer similar products. ■



EARLY ADOPTER: XML AND TELECONFERENCE SOFTWARE AG INC.



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ciated with EDI, NorthAmerican Logistics has recently started using XML for its business-to-business data exchange.

This Web-based approach aligns NorthAmerican Logistics' capabilities more closely with those of its partners, says CIO Ann M. Harter. And it offers the logistics provider, which is a service of Fort Wayne, Ind.-based North American Van Lines Inc., a relatively easier way to exchange different types of data than EDI does, while making the data exchange process faster and more efficient.

The company won't completely abandon EDI anytime soon. But in each of the next three years, Harter says she expects that NorthAmerican Logistics will move at least 10% of its EDI traffic over to XML. The goal, she says, is to eliminate at least \$40,000, or 13%, from the \$300,000 the company spends currently on VAN costs each year.

Playing a central role in this transformation is Tainino XML Server, a native XML database from Software AG. The database allows NorthAmerican Logistics to store and process XML documents natively without any transformation.

In traditional relational database management systems, XML data has to be modified and reconstructed each time it's stored or retrieved, according to Software AG's Karen Dedda. Tainino XML Server makes that process faster.

This makes it a good technology for applications where reliable and fast exchange of XML data is important, she says.

Tainino was first out of the blocks and is the current market leader, but vendors like Ixia Soft Inc. and Necore offer similar products. ■

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Attack on Feds: It Came From Within

Who is running port scans of federal intelligence computers from the corporate LAN? A system alert leads to a wake-up call—and some anxious moments. By Vince Tuesday

MY SECURITY TEAM was recently asked to help reduce costs by consolidating after-hours security and IT support services. We had been charging a nightly fee for round-the-clock on-call support, but the company reasons that it's cheaper to consolidate all first-line support to the on-call IT team that supports our applications.

I trained the on-call team, covering the most common problems and what to do if there's a situation they can't handle. My security team now offers second-line support.

The alerting system is well tuned, and we don't get many after-hours alarms, so I doubted we'd be called often. I was wrong.

At 3 a.m. on the first night the IT team took over, I received a call from a rather worried on-call guy who had been paged with an "ISS" alert. He didn't know that ISS just stands for Internet Security Systems Inc., the Atlanta-based vendor of our intrusion-detection software.

One of the many things we can detect is probes sent from ISS's Internet Scanner software. The scanner lets administrators check their networks for vulnerabilities, but attackers can also misuse it to map our networks and identify weaknesses. ISS tries to prevent this by using a complicated licensing process that limits the IP addresses each tool can attack. It also sends some special packets at the beginning of each scan, including

the license key, the user name, and the host and domain of the scanning machine. That way, if someone uses the tool to scan a network they don't own, the product will announce who they are.

We monitor for these packets in case somebody finds a way, using network address translation perhaps, to trick the scanner into thinking it's probing a local machine when in fact it's scanning us.

More worrisome is that, as with other digital rights management systems, hackers claim to have broken ISS's license key system. In fact, key-generation software can be found on the Web to make keys for any network.

The fake license keys these tools generate typically have an ID of 1234. So even if the special packets contain the hacked ID, you have very little to go on. We could also expect the attacker's IP address to be faked.

The normal response to an ISS alert, we told the new support team, is to trace down the

source of the attack via the America Registry for Internet Numbers (ARIN) Web site at www.arin.net and notify the attacker's Internet service provider. We even have standard forms for those submissions. We don't really expect the ISP to do anything, but at least we try.

Internal Attack

But the detail that worried the front-line support chap, and that made me snap awake at that awful hour, was the source of the attack: It came from within our own network.

Maybe someone we'd hired was a bit of a hacker. Or maybe the system had it wrong, and the attacker was actually the target.

I asked the support technician for the target address of the probes. It was the IP address 10.1.1.3, which seemed rather odd. The address range 10.x.x.x is reserved so companies can use it internally, as we do. So perhaps this was a typo? We was it x.x.x? After a quick check of ARIN, my blood ran cold. The results read:

DOD Intel Information Systems (NET-DODIS) Defense Intelligence Agency Washington, D.C.

We had detected an attack against the DIA, the heart of the U.S. intelligence services, that came from our own network—and I doubted that we were the only people to spot this. No doubt somewhere in Washington someone was also being woken to respond.

Whoops. We had to work out what was going on before men in trench coats and dark glasses arrived. I took control of the call and began searching for the internal machine.

I traced the machine to one of our Unix server clusters. It seemed to be the one running

our enterprise monitoring system (EMS). That didn't make sense—ISS stopped making Unix versions of Internet Scanner a long time ago. If a hacker could get hold of a license generator, why would he make keys for an old version? The Unix version of Internet Scanner was five years old, so the problems it might look for would have been fixed by now, making it useless.

The Mix-up

Then a few pieces fell into place. The EMS pings every interface on every router we have to make sure each is responding correctly, and the ISS special packets use the same protocol as ping. Perhaps there had been some kind of mix-up? Could the EMS, by chance, have sent an ISS alarm packet?

I woke the network team and got them to check the configuration. Ah! We were monitoring the 10.1.1.3 address. It seems someone had mis-typed what should have been a 10.x.x.x address.

So our EMS was accidentally trying to manage the DIA's network devices. But was it also the unwitting host of a hacked version of Internet Scanner? We could find no evidence of any such tools on the machine. It seemed much more likely that the "attack" was just an odd packet. But with no record of the packet from our intrusion-detection system, we faced a choice: We could either ask the DIA if they had a copy, or we could keep our heads down.

We're keeping our heads down. I've updated the firewall to block any attempts for the EMS to talk outwards, and hopefully that's the end of it. That is, unless the feds come knocking. ■

WHAT DO YOU THINK?

This week's journal is written by a real security manager. "Vince Tuesday," whose name and employer have been disguised for obvious reasons. Contact him at vintuesday@netval.com, or join the discussion in our forum.

To find a complete archive of our Security Manager's Journal, go online to computerworld.com/journal

SECURITY LOG

SECURITY LOG is a weekly column that provides a snapshot of the security world. It covers the latest news, trends, and issues in the field of information security. The column is written by a security expert and is a must-read for anyone interested in the field.

Security Pays

Security is a business. It's a business that's growing rapidly, and it's a business that's essential to the success of many companies.

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Draining for Shanghai

Shanghai is a city of 17 million people. It's a city that's growing rapidly, and it's a city that's essential to the success of many companies. Shanghai is a city of 17 million people. It's a city that's growing rapidly, and it's a city that's essential to the success of many companies.

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35 Years of IT Leadership



On September 30th, Computerworld celebrates 35 years of reporting on the Information Technology evolution by showcasing the people, projects and companies that have shaped the industry.

In the issue, Computerworld will laud 35 innovative technologies and applications that have impacted business practices since 1967 and celebrate the greatest technology successes of the past three decades. In addition, Computerworld will talk with the IT movers and shakers about where IT is headed as the industry continues to evolve.

This collectors edition issue will also feature a multipage timeline to guide readers and Web site visitors through significant technology events from 1967 to 2002. The timeline will document key dates and developments in the IT industry, from the early stages of the technology revolution to the latest in cutting-edge innovations.

Join us next week for a stroll through history and look forward, with us, toward history to be made.



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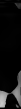
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YALKIN DEMIRKAYA

has fifteen years of law enforcement experience as a detective as well as a detective squad commander. He is the founder and currently the Commanding Officer of the Computer Crimes Investigation Unit of one of the largest law enforcement organizations in the world

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THIS WEEK

WHY SWITCH TO LINUX?

Linux may be free, but that's not what makes it cost-effective, say experienced users of the operating system. Faster processing, smoother scalability and streamlined administration and systems maintenance are among the advantages. **PAGE 42**

SINGING FOR THEMSELVES

IT prima donnas are arrogant. They lack social skills, and they suck up untold hours of management time. But master the right techniques for managing these talented technical professionals, and they may become some of your best employees. **PAGE 48**

ANGST-FREE FEEDBACK



Shelving the pass/fail approach to performance reviews and feedback sessions can yield positive results, but it takes fore-

thought and practice, says Jean-Francois Manzoni (above), a professor of management featured in this month's *Harvard Business Review*. **PAGE 46**

WORKSTYLES

After the separation from Hoechst, Celanese AG is working to centralize IT and keep the culture lively and informal. **PAGE 50**

CAREER ADVISER

Fran Quitell counsels a telecommunications systems engineer and a veteran UNIX systems administrator. **PAGE 56**

ERIC GOLDFARB/PEER TO PEERS

Answer the Call

WE'VE ALL HEARD THE COME-ONS. "Hello! This is easy money." Right. No CIO or IT manager can afford to sit waiting for profitability to call. We are living in an extended recession contaminated with the likes of Enron, Arthur Andersen and WorldCom. The wake-up call we need to hear and heed is "Adapt or fail."

Companies' survival and recovery depends on adjusting to the ever-changing business environment. Unfortunately, the harsh reality of today's marketplace is that as companies struggle with declining sales and profits and bloated costs, IT and other employees will continue to be laid off. Others will find themselves in dead-end jobs. Loyalty, seniority and entitlement are employment precepts from the past that no longer apply. IT employees in particular need to find ways to make themselves continually more valuable, thereby making their companies more productive, efficient and profitable.

Despite the sluggish economy and job market, the future of worldwide business isn't hopeless to those workers who evolve with the times. The message is clear: Upgrade your skills and stay flexible. Be willing to take on tasks and tackle goals outside of your day-to-day job. If you're an applications programmer, consider a new development area. If you're a LAN administrator and your group needs help with Web applications, learn the appropriate new skills and apply them. What is needed is for every person in IT to grab a shovel and start digging.

Companies that survive this downturn can't afford to retain the employee who deletes or ignores this critical message. For those who listen, here are some specific ways to increase your own effectiveness and enhance your value to your company, its profits and productivity:

- Take off your blinders. Overcome denial and self-deception about the invincibility of your career or your company. You need to see clearly where your company is going and how IT fits into its business strategy. If your company is putting a lot of time into cash management, look for ways to enhance systems to provide tighter financial control and better forecasting. If the focus is on improving the customer experience, look for ways to apply IT to that goal. The bottom line is that IT and business must be aligned.

- Determine the scope of your company's business. Is IT needed and how can IT department is mapping to those requirements. Only then can you determine how IT can and should fit in. Don't try to be all things to all customers. Resources are scarce. Set reasonable goals and expectations for problems, and solve what you can within the IT budget.

- Restructure and renegotiate contracts to

reduce financial and performance drags on the IT department. Closely review service agreements with out-sourcers. Determine what is wasteful or overkill. Could you live with 98% vs. 99.9% uptime for an application?

- Get a handle on cash management. Pull the plug on any IT activity that is losing money or not making it.

- Commit to your role. Although the workforce has shrunk, your task hasn't; your company will continue to expect more from you. I, for one, have been asked to take on operational and financial functions that don't fit the traditional CIO job description.

- Abide by the golden rule. Given the recent accounting scandals, each of us could use a reminder of its value. In any business, it's all about trust, and when trust is breached, profits suffer.

- Satisfy your customers, and document the results. Customer/user satisfaction is a key source of job security. If you're on the help desk, publicize positive results and find what the help desk can do to improve more.

- Contribute more to your company than it costs to employ you. Working hard and doing good work aren't enough; you get an A for expending your skills.

It's all about increasing the value you bring to an organization. Since your expertise is your ticket to success, take responsibility for continuing your education and increasing your knowledge. Invest in yourself. Don't expect your company to pay for training as it may have once done. You are in charge of your career.

Ongoing improvement is the one commonality that surfaces when studying corporations that have emerged successfully through multiple business cycles. Companies that invest in training come out ahead.

A study of more than 3,000 U.S. workplaces, the National Center on the Educational Quality of the Workforce found that on average, a 10% increase in the workforce education level led to an 8.6% gain in total productivity. On the other hand, a 10% increase in new equipment spending improved productivity by only 3.4%.

Put stock in yourself, and never stop developing skills that will enhance the value you bring to your business. That value, if greater than your cost, will keep you employed and marketable. The result will be a company that emerges as a long-term winner. ■



ERIC GOLDFARB/PEER TO PEERS
A former technology executive, Goldfarb is a partner at IT education consulting firm Peer to Peers.



It's power, speed and simplicity that drive Linux ROI. By Connie Winkler

FREE MAY BE ONE of technology managers' favorite words, but it typically figures minimally — if at all — into ROI calculations for switching to the Linux operating system. Many companies that have made the switch to Linux rank its zero price tag as relatively low on their lists of key ROI factors.

Instead, what counts most are:

- Reduced hardware costs — by as much as 90% in some cases.
- Faster processing and smoother scalability, which translate to ever-faster online responses and easier computing upgrades to support new or more customers and applications.
- Streamlined administration and systems maintenance, which work to lower labor costs, usually by about one-third.

■ A flexible, lean-and-mean technology infrastructure that ensures the company will be competitive in the future.

Continued on page 44

ZERO PURCHASE PRICE, BUT...

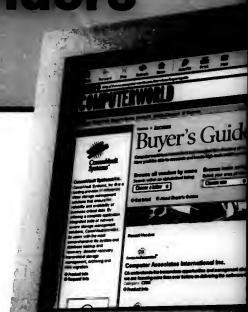
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Continued from page 42

"Everyone says Linux is a free operating system and that's why you're making the choice, but that isn't the primary driver," insists Brad H. Friedman, vice president of information systems at Burlington Coat Factory Warehouse Corp. in Burlington, N.J. The real advantage is the much lower cost of Intel hardware on which Linux and its applications can run efficiently — and cheaply, he says. Burlington, a longtime Unix user, is currently installing its second Linux system.

Chicago-based Orbitz Inc. is also sold on the cost savings and enhanced processing power and speed afforded by the Linux/Intel combination. This month, the transaction-intensive online travel reservation company is going a step further with Linux by replacing its 50 Sun Microsystems Inc. Java application servers running Solaris software. These heavy-lifting systems feed the company's 700 Web servers — already running Linux — which dish up the screens customers interact with when they make airline, hotel and vacation reservations online.

This summer, Orbitz benchmarked several vendors' latest hardware systems, including Linux on commodity Intel boxes, and the results were compelling.

"To maintain the same capacity in terms of the number of users on our site, we were able to move [from the Java servers] to the commodity [Intel] systems for about one-tenth the cost," says Roger Liew, vice president of technology development.

"We also increased the speed in moving into a more efficient hardware and software environment," adds Liew, referring to the faster response times of the Intel environment. Sun's latest hardware also delivered the higher speed, he says, but the scalability wasn't as great. With Linux, in contrast, doubling the number of Linux boxes doubles the system capacity.

As for the Web servers, Liew especially appreciates Linux's ease of maintenance, which requires a single administrator for the 700 machines. "Everything is automated. It's probably one of the most reliable aspects of our system," he says. Increasing system capacity is as simple as taking the Linux/Linux servers out of the box, putting them on racks, powering them up, and running start-up scripts, Liew says.

A Linux Leap of Faith

For Menasha, Wis.-based Menasha Corp., a \$1 billion packaging company, moving its SAP AG software applications from a mix of Unisys Corp. and Hewlett-Packard Co. systems to 135 Linux-based Dell Computer Corp. servers was a leap of faith.

"We didn't know it [in 2001], but we know it now," says Ed Wojciechowski, Menasha's CIO and president of Menasha Advantage, an in-house, for-profit IT company set up to provide enterprise resource planning applications to the firm's five packaging subsidiaries. "We projected cost savings in the 5% to 10% range. As we look now, our Linux deployment is saving us 20% on hardware alone."

He says he has found another 5% in soft cost savings associated with ongoing operations, such as not having to support a bloated software product that had unused features and required complex maintenance. Previously, Menasha's bundled proprietary

operating system software had lots of capabilities that the company didn't use but still had to support to keep the software running and to comply with vendors' requirements.

ROI has also come from the 240 Web portals the firm launched in 2000. They enable customers such as food makers and consumer product manufacturers to work tightly with Menasha in the tricky collaborative packaging-design process. "We're getting about 2% in additional sales, or \$20 million, through our [package design] e-commerce business," notes Wojciechowski, whose IT staff totals 15 people. "Today, if you hold your own, you are actually gaining market share."

But for Menasha, and for other Linux users, the operating system is about more than dollars. Wojciechowski emphasizes what he calls the agility of Dell's Linux/Intel architecture. Menasha now buys highly specific software, as opposed to big, proprietary bundles. On the hardware front, the agility enables Menasha to expand its server farm incrementally, application by application, or on a volume-by-volume basis. "We bought what we needed, which we felt was a great way to manage our infrastructure," says Wojciechowski.

Burlington Coat Factory recently switched its PC-based in-store management system to Linux, resulting in a 20% ROI improvement compared with running Microsoft Windows licenses on the five PCs in each of the national retailer's 350 stores. "To administer that many [Windows] PCs would be a gargantuan task," says Friedman. "With Linux, the administration is minimized."

Now the discount retailer is replacing 4,500 to 5,000 in-store point-of-sale terminals from NCR Corp. with ones from Austin, Texas-based WinCor Nixdorf Inc. that run Linux applications from Raleigh, N.C.-based Red Hat Inc. On both hardware and software, WinCor expects 20% to 25% savings. And the decision to replace the terminals was as much about the NCR gear being 15 years old as it was about the advantages of Linux, says Friedman.

Virtually all the Linux users interviewed said they value Linux as a path to the future and not just for the open technology itself.

In Pasadena, Calif., Parsons Corp., a large engineering and construction firm with \$2.5 billion in revenue and 10,000 Windows PCs, is evaluating moving its approximately 300 servers running 1,000 different applications to Linux or Unix by late 2004, when its contract with Microsoft Corp. expires.

And what about on the desktop? Right now that's a tough decision, because those 10,000 PCs worldwide are running complex engineering applications. But it will be a no-brainer in a couple of years, predicts CIO John Thomas.

"We think by 2004, there's not going to be a lot of choice out there," says Thomas, adding that by then, the strong ROI generated by Linux on Intel systems will be common knowledge, making it the obvious and most compelling technology option for the future. ■

Winkler, former Computerworld New York bureau chief, writes in Seattle about the management of technology. Contact her at twinkler@drizelle.com.

Linux PIECES

The Linux operating system is and without its developers, there are a few features to consider before making a switch.

1.

For many businesses and engineering applications, Linux software doesn't exist. Burlington Coat Factory, for example, is still waiting for a capable word processing application that runs on its custom Microsoft Windows. And Parsons has found very little Linux-ready engineering software to handle its complex, distributed engineering requirements.

2.

Because it's only about 10 years old, Linux is still considered by IT professionals. Some companies are even testing their employees on Linux.

3.

The ease and slick design of the Linux operating system makes it a better addition to business desktop systems. Internal/external networks, Web servers and high-volume systems, such as those used in financial services and Hollywood marketing, show on Linux.

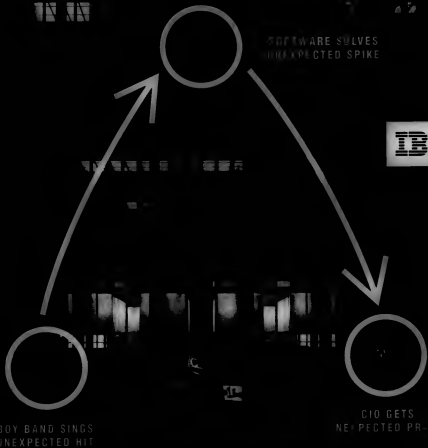
4.

As Linux becomes increasingly popular with large companies, there's concern over the operating system splitting into multiple incompatible versions, which occurred with Unix during the 1990s.

5.

The fact that Linux is free and maintained by volunteer programmers around the world — but open source doesn't mean free if you don't mind. One vendor reportedly labeled it a "bath of code" with too many cooks.

—Crisis Winkler



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WHILE IT'S NOT UNUSUAL for an employee to think some customers are stupid, few say so to customers directly. But Vivek Wadhwa, CEO of Relativity Technologies Inc. in Cary, N.C., has twice had to apologize during the past few years to customers who have endured developers calling them "stupid" right to their face.

What kind of employees would do that? IT prima donnas. They're smart, they're skilled, they're opinionated, they're arrogant. And, yes, they're frequently even right. But are they really worth the management headaches and morale problems they can cause?

Greg Walton, CIO of Carilion Health System, a \$658 million Roanoke, Va.-based health care company, defines prima donnas as "big brains" with stronger intellects and stronger egos than other workers. "They tend to operate on a different plane, see problems differently, see solutions differently," he says, adding that those qualities make such employees worthwhile.

But treating prima donnas like other employees is a mistake, notes Walton. Instead, he says, master the techniques for managing them, and they may become some of your best employees.

Gene Bedell, CEO of Engenia Software Inc., a man-

agement software company in Reston, Va., tells the story of a brilliant technical person who couldn't get along with people, said whatever was on his mind, and didn't suffer fools gladly. "We cleared the ground around him," says Bedell, referring to limiting the employee's interactions with others. "We wouldn't let him manage anyone. We told others to give him some slack. And we gave him a lot of coaching."

Eventually, this prima donna learned how to be a team player and was made a manager. Bedell was able to benefit from the prima donna's technical abilities, while the employee worked on his social skills.

Garrett Granger, CIO at pencil manufacturer Dixon Ticonderoga Co. in Heathrow, Fla., gives the following advice for managing IT prima donnas:

- Give them the personal attention and feedback they demand and require.
- Be diplomatic. Prima donnas often react quickly—and negatively—to criticism, which they take as an affront to their abilities. Granger is direct when giving criticism but takes the edge off by saying, "Don't take this wrong, but..."

■ Steer them in the right direction. Prima donnas are prone to going off on tangents because they think they have the better solution. Granger addresses this by putting them on projects that require teamwork. "When they have to work on common things, it slows down the prima donna's ability to branch off on tangents [and] tempers their arrogance," he says.

Giving the prima donna more of your personal time, seeking his advice on IT projects and issues and letting him in on future projects earlier than others also help to fill the prima donna's need for special treatment, says Walton. But don't single him out too much, or you risk alienating others on the team, he cautions. Still, a little special treatment goes a long way.

Prima donnas frequently cause morale problems by belittling others. Dan Bent, CIO at Benefit Systems Inc., a third-party Indianapolis-based administrator of employee benefits, stifles this by pointing out to the prima donna that it's other workers who do many of the repetitive tasks the prima donna would never want to do. Bent says he works with the prima donna so long as the benefits outweigh the negatives. He says he cuts the cord "when the behavior offsets the person's effectiveness—when they're more trouble than they're worth."

Wadhwa says he fences off prima donnas and "puts

WORTH YOUR WHILE?

The following are a few factors to consider when dealing with a prima donna:

NOT ALL PRIMA DONNAS ARE THE SAME.

Some have annoying personalities but remarkable technical abilities, while others go off on their own and provide minimal benefit to the organization.

HOW HIGH IS YOUR OWN TOLERANCE LEVEL?

As a manager, do high-maintenance employees bother you or provide you with a desirable challenge?

WHAT'S YOUR ORGANIZATION'S CULTURE?

A company with a button-down corporate culture will have more difficulty benefiting from prima donnas than a company with a more free-wheeling culture.

them in their own world." They're worth doing this for because they are so good at what they do. But that's assuming the worker fits Wadhwa's definition of the prima donna who's a genius.

There are plenty of IT managers, though, who say prima donnas are so disruptive that no amount of talent can compensate for the problems they cause and the disproportionate amount of management time they require. "I would sacrifice someone who was enormously talented if they continue to be a prima donna," says Tom Lewis, chairman and CEO of Salt Lake City-based Campus Pipeline Inc., which provides technology services to colleges and universities.

The image of a man who claimed he could produce better software code than anyone on the team is still vivid after 25 years to Jon Dell'Antonio, CIO at children's clothing manufacturer OshKosh B'Gosh Inc. in Oshkosh, Wis. Recalls Dell'Antonio, "The guy was an incredible talent [but] he was such a disruptive force. He would berate others. We had to let him go."

The bottom-line question for managers is how to know when to let a prima donna go. The answer: When the employee is costing you more than he is delivering, managers say. You can see this in terms of lost team morale and antagonized customers, or when projects go off course and cost more or take longer than they should. All are sure signs that it's time to cut the cord. ■

Horowitz is a freelance business and technology writer in Salt Lake City.

WHEN ENOUGH IS ENOUGH

Go online for the main signs it's time to cut the cord on your IT prima donna:

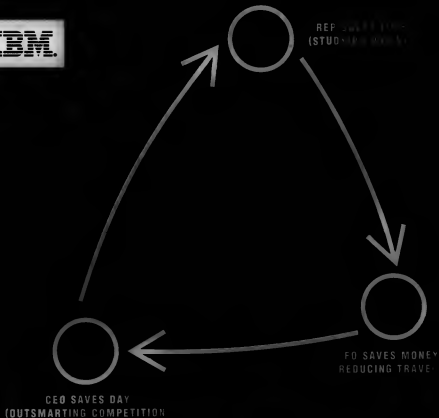
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SINGING FOR THEMSELVES

How to tone down IT prima donnas to enhance staff harmony and productivity.

BY ALAN S. HOROWITZ

IBM.



software

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Angst-Free Feedback For IT Managers

How to take the sting out of giving bad news

Managers hate to give negative feedback, and many defeat the purpose of a feedback discussion with employees by setting up a confrontation. So says Jean-François Melymuk in the September issue of the Harvard Business Review. Manzoni, the associate professor of management at Insead in Fontainebleau, France, and the director of the Insead-PwC Research Initiative on High-Performance Organizations, says taking a different approach to giving feedback can make those discussions—and your employees—more productive. He discussed his ideas with Kathleen Melymuk.

What is the most common mistake IT managers make in giving corrective feedback to their employees? IT managers' problem with feedback starts with the way they frame—it mentally construct—the situation. Feedback is something that bosses have and subordinates get. The implicit complement is that this feedback is right, of course.

How might this play out? "Bill's performance is not up to my expectations. I know why: Bill has the following shortcomings/skill or character deficiency. I want to tell Bill about this, but he may not like hearing what I have to say. He may be hurt, and he may try to hurt me in return. Also, if Bill refuses the feedback and pushes back on me, things may escalate and worsen the current situation. So I hope Bill will accept the feedback and spare me an unpleasant moment."

What's wrong with this approach? This framing is narrow because it excludes some potentially interesting issues and questions such as: Am I right? What's the evidence on which my assessment is based? Could I be missing part of the picture? How much is it really about Bill, vs. about the situation Bill is operating in? And what about me? Could I

be contributing to the situation, and if so, how?

In addition to being narrow, this framing is binary in that there are only two possible outcomes: The session is a success if Bill accepts the feedback; otherwise, it's a failure.

Why is this mistake particularly likely to happen in an IT environment?

IT environments present three characteristics that make it particularly hard for bosses to approach feedback productively. First, the success of IT projects tends to be very dependent on the actions of many parties outside IT, particularly IT users. When looking at results, it is hence difficult to untangle the exact contribution of the IT staff from the impact of the conditions they were operating in. Second, IT is often a bad-news-driven environment. Most of the feedback IT receives from the organization tends to be negative. Last, several aspects of IT involve work that is intangible and largely invisible until completion. Assessing progress intelligently is difficult.



Several aspects of IT involve work that is intangible and largely invisible until completion. Assessing progress intelligently is difficult.

You say the situation worsens if the framing remains frozen during the discussion. What does that mean? Bosses rarely revise their position during the encounter, even when the subordinate brings up potentially relevant information. That lack of flexibility prevents a more effective handling of the situation and can lead to an escalation in tone and/or content of the discussion.

Why don't IT managers just revise their perspective during the discussion?

First, they are not conscious that they framed the encounter in a narrow and binary way. It's hard to consciously revise a mental construct that we don't know we have. Second, the more intense the discussion, the more energies are diverted to keeping oneself and the discussion under control, and the smaller the bandwidth available to process fully the information we receive.

There's a different approach you call "easing in." What's that?

Easing in is an attempt to avoid collision with the other party. So rather than telling you what I have in mind, I am going to ask you a series of questions which, if you answer them correctly, will lead you to the "right" conclusion—(the one) I have already made. A typical easing-in question is: "Don't you think that...?" It really means: "I think this way, and I really hope you'll agree."

You say easing in is a gamble that often doesn't pay off. Why? Easing in is successful only when the subordinate gives you the "right" answers and does not realize he is being manipulated.

How does easing in go wrong? If the subordinate fails to give the "right" answers, the boss must either fold and try again later, or else make his point more explicitly. And the subordinate (may) realize somewhere along the

way that this is not really a discussion: He is being led carefully to a prepackaged conclusion. Most people don't like feeling manipulated.

So aside from failing to achieve their purpose, these approaches can damage relationships? The frontal delivery of [negative or corrective] feedback often leads to escalations, resulting in one or both parties saying things they didn't really want to say, and/or in one or both parties giving up and pretending to agree. The easing-in approach can lead to an escalation if the subordinate does not "play along" and it can lead to the subordinate pretending to comply if he realizes the boss has already made up her mind. None of these outcomes is very constructive.

What are the conditions that make critical feedback more amenable to employees?

Research suggests that feedback receivers are more likely to accept and act on feedback when they feel that the feedback source has good intentions toward him/her; developed the feedback fairly, which includes collecting all relevant information, allowing the receiver to provide clarifications/explanations and applying consistent standards; and communicated the feedback fairly by showing openness toward support for the receiver.

Can you give me an example of the right and wrong way to open a feedback discussion? Bosses

should approach feedback with a mental framing along the following lines: "I am not happy with Bill's present performance, nor with our relationship. I think I understand where Bill's problems are coming from. But I could be wrong. Bill probably feels the malaise and wants this job and our relationship to work at least as much as I do. So we both want the same thing but somehow we're not getting it right. Let's sit down and discuss why this is the case and how I can help."

This framing is not binary—there's no clear pass/fail criterion. It is broad and, hence, flexible. It is a good basis for a real discussion. If you think this way, the words will come out right. ■

Melymuk is a Computerworld contributing writer in Woburn, Mass. Contact her at jmelymuk@earthlink.net.



ACCORDING TO Jean-François Melymuk, IT managers' problem with feedback starts with the way they frame—it mentally constructs—the situation."

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"Dear Career Adviser:

I'm a senior systems engineer in the telecom industry with a background in C++ and Network Exchange looking for a new home, and I'm wondering whether to stay in telecom or switch out since the current opportunities

are rather slim. I'm running out of places to look.

— Telecom Wonder

Dear Wonder:

Check out advanced networking at www.internet2.edu, which describes the efforts of industry and, particularly, education moving toward new standards.

"Organizations are very interested in expanding the capabilities of their networks to include real-time television-quality videoconferencing, en-

abling true multisite collaborations," says Greg Wood, director of communications at Washington-based Internet2, a consortium led by 200 universities in partnership with industry and government that develops advanced network applications and technology.

Just like some 10 to 15 years ago when the National Science Foundation helped figure out how to use TCP/IP networking on a grand scale, today's academic and research worlds are attracting many of those who left for private industry

jobs but now want to work on new and interesting uses of high-performance networking across global environments. Check out the institutions and companies listed at Internet2 and the job postings at www.educare.edu.

Dear Career Adviser:

I'm a Unix systems administrator with some 20 years of experience. But I want to be in the strongest possible position to keep my current job — and prepare in case I am laid off. My

employer is a small company that doesn't pay for education, and my budget and time are slim. Any ideas?

— KEEPING UP

Dear Up:

Often, keeping a job or getting a new one depends on your ability to show that you have kept up technically and have the initiative to learn. You can download tool kits and work on development efforts at home. Take on extra projects at work beyond the usual scope of your assignments. Find out more about the most visible projects at your company and start adding the skills for those projects, even if you aren't currently working on them.

If your budget and schedules are tight, you have alternatives, such as the Association for Computing Machinery (www.acm.org) and the IEEE Computer Society, which provide free distance learning courses as some of their newest benefits of membership.

The Computer Society's distance learning program covers hot topics such as Java, C++ programming, Cisco networking devices, HTML, and project management.

Through its partnership with KnowledgeNet in Scottsdale, Ariz., the society provides more than 100 course titles to its members. To view the complete course catalog, visit <http://computer.org/DistanceLearning/catalog.htm>.



WORKSTYLES

Centralizing IT In a Lively Way

What are the most critical systems supported by your department? Hoechst was a mixture of all sorts of things: 60% pharmaceuticals and 40% other stuff. Celanese now has 'the other stuff,' which includes the compound that goes into paint and vinyl siding, the cellulose acetate that goes into yarn and men's suit linings, the sweetener that goes into [some diet sodas] and the foils for things like M&M's.

"From the '90s, Hoechst said, 'You're on your own, and you have to be profitable.' So we are now bringing all our different companies together under one operating company. As a result, we have several initiatives

called 'One,' such as One Celanese, One SAP.

"From an IT point of view, we also had five independent IT organizations. We've put in shared services for our infrastructure, and we have a governance group that does architecture and project management. The One SAP project intends to consolidate the many SAP systems we have. ... After that is done, we will be at 80% centralized."

How would you describe the pace of the work? "We work more than 40 hours a week, but people come here to get things done. Nobody looks at the clock and says, 'I have to leave at 5.'

"This is a lively company."

What makes it lively? "When we were Hoechst, we were something like a \$30 billion company, and now that we're a \$5 billion company, we understand our behavior has to change. In the past, we were like a slow-moving elephant; now we want to be the dancing elephant. People have understood that we have to get things done ourselves because no one else will do it for us. There's a sense of ownership."



Celanese AG

Interim CEO: Karl Wachs, CO

Type of business: A chemical manufacturer, with 30 production sites in 19 countries. The company was founded in 1909 as a result of the separation from Hoechst AG.

Main location: Krefeld, Germany

Number of IT employees: 180 internal staff and 150 contractors worldwide

questions and get questions. They are trying to forge an environment where people can speak up and drive things."

What do you like best about how career advancement and training are handled? "We've identified high-potential people who get special treatment and are supposed to be our future leaders. They get sent around the world and throughout the company, to IT or logistics or finance. They are required to take with them an understanding of all the problems and issues and opportunities of these functions."

What aspect of work do you look forward to each day? "The connection with people and different cultures. I travel quite a bit, to Germany, Dallas and once in a while in Asia. That is still very interesting."

— Mary Brandt/
brandt@netb.com

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Paradigm Lost?

IS COBOL DEAD? Not if you believe the readers who wrote to object after I suggested in a recent column that "some IT practices and job titles will go the way of punched cards, Cobol and green screens" [QuickLink 32513]. One reader told me, "Cobol is alive and healthy. Oh, we use Web front ends, all of our data is on Oracle and our development staff uses a combination of desktop and server tools in their work. But the industrial-strength grunt work is Cobol on Unix servers. We haven't found anything that can handle batch data in a more effective manner."

"I suggest you check your facts," wrote another reader. "Despite the barrels of ink claiming otherwise, the business world still runs on Cobol." Still another said, "There continues to be this perception in the media that Cobol is dead. It's very much alive and very much being evolved. Take note of the vendors (Fujitsu and Acucorp, for example) who have now ported this language to the Linux operating system. I don't think it's going away anytime soon."

OK, let's be clear on this: Cobol isn't dead. It's not at death's door. It's not even sick. It's still an IT workhorse.

But let's be clear on this, too: As recently as a decade ago, Cobol was the king of large-scale development. Now it's not. And Cobol's throne wasn't usurped by PL/1 or any other competing language. Cobol lost its place to SAP and PeopleSoft and Siebel and Baan and other packaged enterprise applications.

IT shops stopped building those big projects and started buying. Our paradigm shifted, and Cobol lost its place at the core of corporate IT. Dead? No. Demoted from king to hard-working minister. Yes.

Now, here's a more interesting question: Could King Cobol ever come back?

Answer: Maybe. Remember, just because a paradigm shifts doesn't mean the original paradigm's lost.

IT shifted to packaged apps because they were less expensive (we hoped) and more standardized than the aging custom Cobol code they replaced. After all, accounting is accounting. Inventory is inventory. Billing is billing. Why reinvent these routine business wheels over and over?

Why indeed? There was a reason companies built those custom systems in the first place. They wanted

to gain a competitive advantage by fine-tuning their business processes in ways their competition couldn't easily match.

The classic example is MCI's original "Friends & Family" program from just a decade ago. It was essentially a specialized billing system for long-distance calls. AT&T's oh-so-ordinary billing system couldn't track "calling circles" the way MCI's custom system could. So MCI got its foothold in long distance by customizing a routine accounting process.

You can't get that kind of advantage with an enterprise package. Any competitor can buy the same software. Whatever you do to specially configure it, your competition can do the same.

If you want any chance at a unique business advantage, you'll have to build it yourself. And that means build-it-yourself enterprise applications just might make a comeback.

Yes, that would be another paradigm shift. CEOs and deep-thinking business gurus would have to decide that there's a limit to the advantages of cost-cutting and that the new way to get competitive advantage from IT is pursuing unique business processes that only custom enterprise apps can deliver.

That won't come this year — not in this economy. But watch for it. Paradigms keep shifting. And with modern design tools and development techniques, and without the albatross of decades-old legacy code that's a nightmare to maintain, Cobol wouldn't be a bad pick as the language of choice for the next wave of big custom development projects. After all, it's mature. It's familiar. It can do the job.

And who knows? Commoner Cobol just might have a shot at becoming the king of corporate IT all over again. ▀



Frank Hayes, Computerworld's senior news editor, has covered IT for more than 20 years. Contact him at frank@computerworld.com.

Hey, Got a Room!

Furious boss tells IT pilot fish to find out what's wrong with office adviser's computer. Office admin schedules all conference rooms, but she isn't receiving boss's e-mailed requests, so his meetings don't get a room. Fish spots the problem when he's forwarded copies of boss's messages. Turns out he doesn't know how to use the address book, so he's hand-typing her e-mail address every time, says fish. "And musingly it."

Take Five

Reporters at this manufacturing plant are printed each night on an old ribbon printer, that why are you running five-part format? pilot fish at headquarters asks user. You probably can't even print through that many sheets of paper.

"Well, the ribbon breaks a whole lot," says user. "And it really isn't a bother to pad off and discard the top caps."

"What, the ribbon breaks a whole lot," says user. "And it really isn't a bother to pad off and discard the top caps."

"What, the ribbon breaks a whole lot," says user. "And it really isn't a bother to pad off and discard the top caps."

Priorities

There's a malfunction at this highly computerized hamster mill, disrupting both the automation controls and the system that tracks donations.

"When I started to repair the automation system, the automation system was the machine would restart," I was reprogrammed," says IT pilot fish. "Management preferred to have us sit in the device time tracking system first."

"Reckless! Still you have highly sensitive materials of the worst device in the company."

OH, THAT!

"I have a e-mail, no one's told me about it," automobile dealership sales manager greets to his boss. You spent hours learning it yesterday, pilot fish knew he reminds him. "That was

e-mail" says sales manager.

"How can I supposed to remember all that? What does that have to do with selling cars, anyway? Nobody uses that."

"What, the ribbon breaks a whole lot," says user. "And it really isn't a bother to pad off and discard the top caps."

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Knockdown

Programmer pilot fish has just finished attending a key monthly 9-month report — now it's a presentation in hours, not weeks. But, his leader VP has said he is change the job title in the report from owner and leader VP to VP and VP. "What kind of knockdown requested such a meaningless change when so many important processes need to be reviewed?" grumps fish. I did, neither here, says fish. "That was the last time I was called to discuss proposed changes in person."

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